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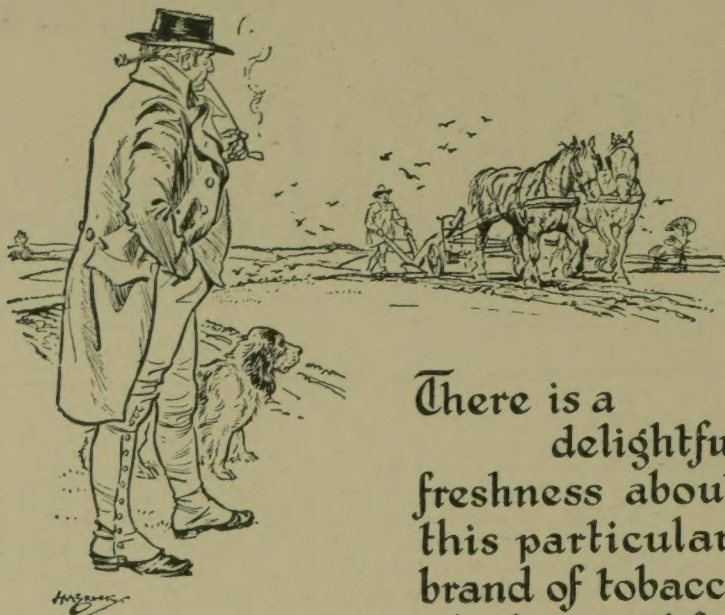
But behind the thrusting progress and virility of this young people and their country there is, ever and always, the romance, atmosphere and adventure of the past . . . the days of the bushranger, the gold prospector . . . of Gold Escorts moving across the limitless forests and plains . . . where primitive man still dwells, remote and isolated by 10,000 years, from the Australia of to-day . . . kangaroos, wombats, possums roam the dense forests undisturbed . . . for Australia is a country of astonishing contrasts and variety . . . vital and lavish, but intensely lovable.

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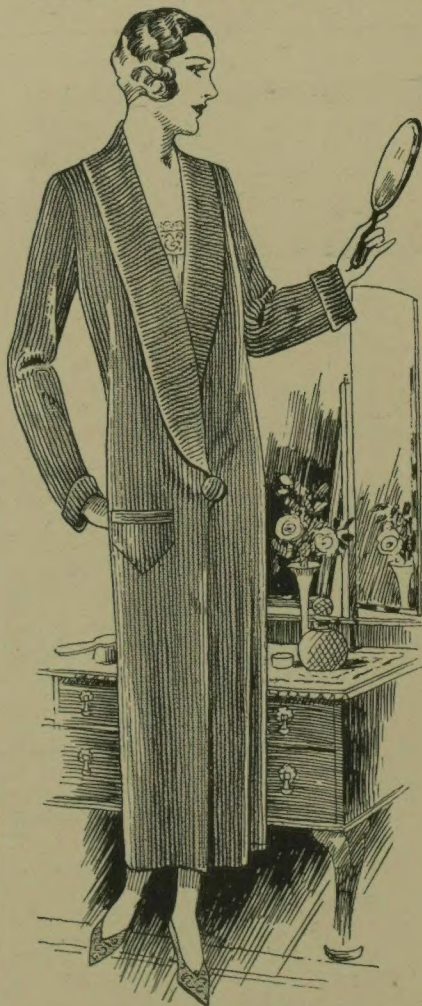
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THE ILLUSTRATED LONDON NEWS

REGISTERED AS A NEWSPAPER FOR TRANSMISSION IN THE UNITED KINGDOM AND TO CANADA AND NEWFOUNDLAND BY MAGAZINE POST.

SATURDAY, JANUARY 17, 1931.

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WATCHERS ON THE NORTH-WEST FRONTIER: AIRCRAFT RETURNING FROM OPERATIONS OVER THE KOHAT PASS— A PHASE IN THE SYSTEM OF TRIBAL CONTROL TO BE EXAMINED BY A NEW COMMITTEE.

The Government of India announced officially on January 11 that, with the concurrence of his Majesty's Government, it had appointed a small authoritative Committee to scrutinise the existing system of tribal control and defence against tribal risings on the North-West Frontier, with a view to determining how far the principles of the present methods are justified, and should be approved for retention and development. The President of the Committee is Mr. E. B. Howell, Foreign Secretary to the Indian Government, and the other members are Air-

Marshal Sir Geoffrey Salmond, commanding the Royal Air Force in India; Major-General S. F. Muspratt, Deputy Chief of Staff, Army Headquarters, India; and Mr. A. C. Badenoch, Officiating Controller of Civil Accounts. The Committee is to begin its work at Peshawar about January 25. The above photograph, taken from an aeroplane, is typical of the work done by the R.A.F. in Frontier defence. It shows a formation of Westland Wapitis (with Bristol Jupiter VIII. F. engines) of No. 39 (Bomber) Squadron, returning from operations over the Kohat Pass.

ROYAL AIR FORCE OFFICIAL PHOTOGRAPH. CROWN COPYRIGHT RESERVED



By G. K. CHESTERTON.

IN the matter of Prohibition the mind of America has undergone a profound and important alteration. The change that has taken place, between now and the time ten years ago when I was first travelling in that country, might be broadly stated thus. Then the strongest enemies of Prohibition were the free-and-easy people: the artists, the poets, the people of liberal education, the people in contact with the older culture of Europe, the sculptors, the architects, the authors, and such riff-raff. Now the strongest enemies of Prohibition are the respectable and responsible people: the judges, the lawyers, the established professional men, the more solid sort of senators and politicians, the bankers, the business men concerned primarily for property and security. In short, Prohibition always had for its foes all the friends of liberty. It now has for its even fiercer foes nearly all the friends of legality.

Perhaps the strangest symptom of a strange situation is something almost horrible in the *humour* of that situation. Of course, no serious person could ever have taken Prohibition seriously. But the only really serious part of it is that it prevents people from taking anything else seriously. Something that is supposed to be grotesque (God knows why) about the subject of beer has spread a froth of frivolity over all sorts of topics, like the froth overflowing from all the tankards in a pot-house. Facts in the social situation that would have been normally regarded as a subject for horror are now almost inevitably regarded as a subject for humour. There has been a sort of smooth and slippery descent to a lower level of seriousness; a universal bathos and even baseness; a descent like a butter-slide, which might be described as a beer-slide. Naturally it was always a joke that Prohibition was merely a joke; it has now ceased to be even a practical joke. But it is no joke that murder is merely a joke. If murder had been presented to the mind in any other connection except this comic collapse of idiotic legislation, nobody would have thought it was merely a joke. Yet it is almost unavoidable, through a mere association of ideas, that we should all of us think of the wild antics of civil war between the bootleggers of Chicago as if it were something so ridiculous as to be unreal. When one of the principal bootleggers, caught between the machine-guns of rival bootleggers, actually fell to the ground filled with lead, it was apparently impossible not to associate it vaguely with old dead jokes about the drunkard tumbling down when he was filled with liquor. A sort of lurid levity lights up the whole pandemonium, and the flowing of blood seems no more serious than the flowing of beer.

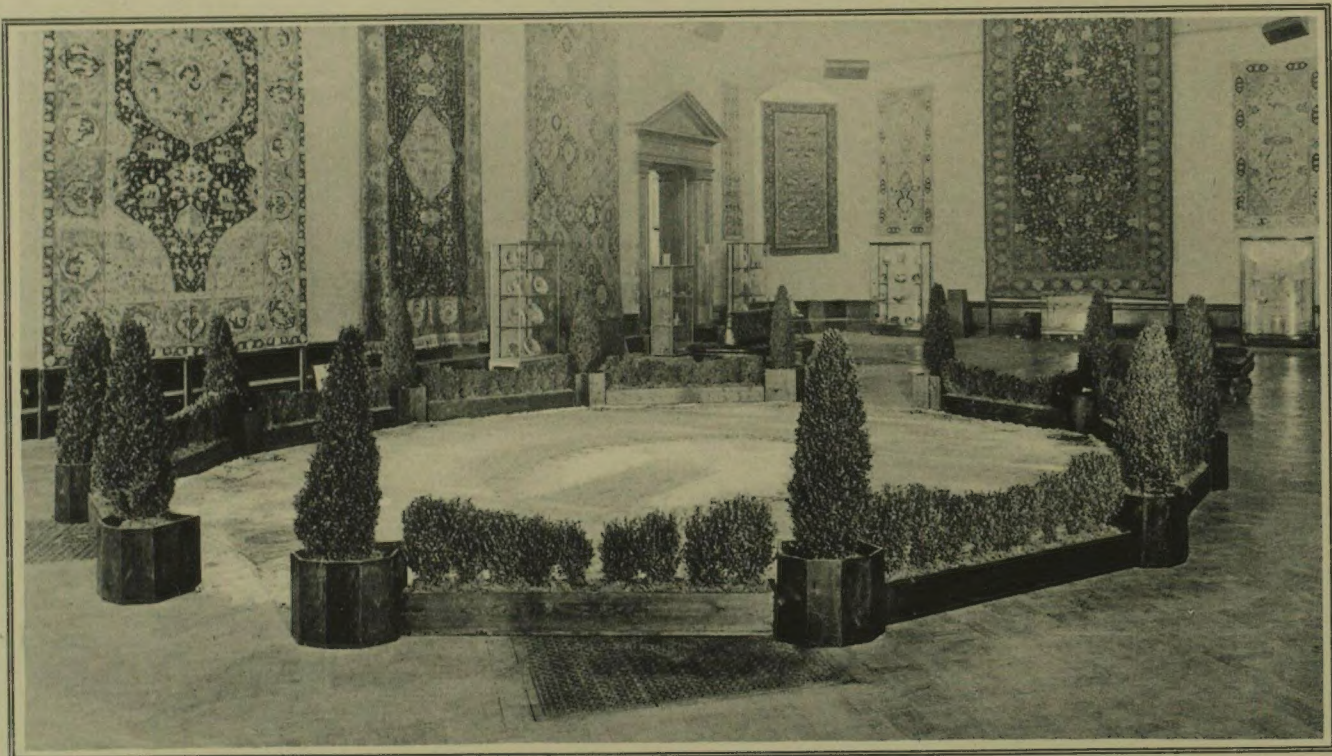
This utterly unnatural inversion is a psychological fact, and is not the least of the facts that combine to tell against Prohibition in the minds of

really serious men. The very fact that Al Capone has become a sort of burlesque brigand, who might appear in a masquerade, illustrates the loss of something that has hitherto been a true psychological deterrent of crime. He is really and truly part of a masquerade, for he is safe behind a mask, because it is a comic mask. The scar of Scar-Face actually has a disarming effect, like the red nose of the old music-hall comedian. The red nose is not the only shade of red that can come to be regarded as comic. This rather terrible laughter, this universal levity and laxity about anti-social actions, once criticised only seriously, is one of the most disquieting effects of the great disaster of Prohibition. That is why it is now being regretted and even denounced by the sort of people who were once prepared to consider it favourably; nay, who were themselves so serious, as to be able for a month or two to take it seriously. They think, with very great justice, that if it goes on much longer nothing whatever will be taken seriously.

of a brewery that is not supposed to exist. The American President, like the Mikado, declares that a thing cannot be done, and therefore it cannot be done; and certainly nobody can be taxed for doing what cannot be done. All this, in its very essence, is like an English comic opera; but it is becoming even cruder, till it looks like an American comic strip. It is asking too much of mankind to expect them not to feel it as comic, and the Americans do feel it as very vividly comic; and yet there is present all the time the equally vivid sense that it is, in fact, very tragic. For all this fun has arisen around a social situation, which is not merely one of murder, but rather of massacre.

I do not think that Prohibition can possibly survive this crushing combination of humour and horror. That is why, as I have said, it has now many new critics, among precisely that sort of serious people who have no artistic pleasure in horror, and are even accused by their enemies of having a defective sense

of humour. To such people it is bad enough that legislation should end merely in crime. It is intolerable that crime should end merely in comedy. And there is added to all the rest the crowning and capering comedy that the criminals are among the few people who are still in favour of legislation against the crime. It would seem an extraordinary thing to say of any community that nearly all the citizens were Communists, and nobody approved of private property except the burglars. It is really true to say, of many parts of the American community, that most of the



A CENTRE OF ATTRACTION AT THE PERSIAN ART EXHIBITION IN BURLINGTON HOUSE: THE SPLENDID SILKEN CARPET FROM THE TOMB OF SHAH 'ABBAS II., AT QUM, SPREAD ON THE FLOOR.

The official description of this carpet—the only one shown on the floor in the Persian Exhibition—is: "Carpet (in two halves), twelve-sided, knotted in silk pile on silk warp. Chiefly in light blue, white, crimson, and yellow. Floral design with cypresses. Joshuaan; mid-XVII. cent. From Shah 'Abbas II.'s tomb at Qum. 823 by 408 cm."—[Lent by the Persian Government.]

Burlesque and parody are almost impossible in our time, because nothing that happens in fancy can be more fantastic than what happens in fact. We have had no good comic operas of late, because the real world has been more comic than any possible opera. Here is a good example in connection with this particular matter. Lawyers and law-abiding citizens have been gravely debating, in the United States, whether the chief organiser of murder in America may not perhaps be brought to trial for an error in his income-tax return. This is a solid, solemn, and rather awful fact. But I challenge anybody to say whether it would not have seemed quite quaintly Gilbertian in a Gilbert and Sullivan opera. It is all the more Gilbertian because it really raises one of those fine legal or logical quibbles on which so many of the Savoy operas were made to turn; such as the plea that the apprentice of the Pirates of Penzance, being born in Leap Year, could not come of age till he was four times the age of twenty-one; or the plea that, as the Mikado's orders must always be carried out, it was right to report them so, even if they had not been carried out. There is obviously a delicate and disputable matter of doubt and judgment as to whether a gentleman can be made to pay income tax at all upon the profits

of citizens are drinkers, and that nobody approves of Prohibition except the bootleggers. By the time that the immoralists are in favour of the veto, the moralists may well be against it. And, to a considerable extent, certainly to a much greater extent than before, they are against it. More and more, as time goes on, the serious social idealists will be against Prohibition. In a sense, we may say that the Puritans are against Prohibition. In a sense, we may yet say that the Prohibitionists are against Prohibition.

Meanwhile, I hope that no one in England or in Europe will make it a mere taunt against the great American democracy that they so swiftly made and unmade this colossal blunder. I think it very possible that more conservative countries, if they did make it, would never recover anything like the spirit to unmake it. It has needed not a little courage and candour and humour to keep up the criticism that has now proved fatal to it, at any rate as a serious social ideal; and I am not quite certain that every country in the world would have been lively enough to have kept that protest alive. There still remain considerable disputes and difficulties about how Prohibition, as a law, is to be abolished. As a fact, it is abolished already.

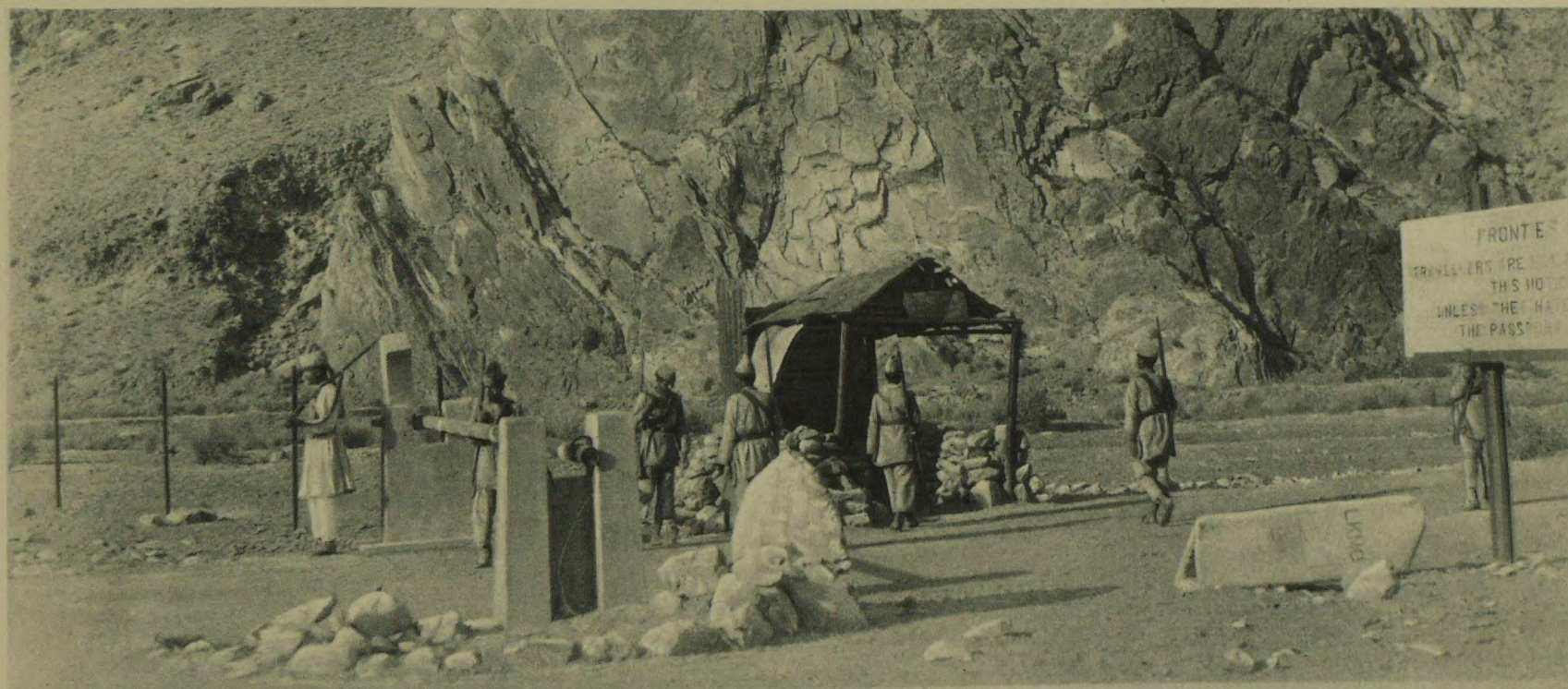
ARMS AND AMMUNITION FOR AFGHANISTAN: THE CONVOYS AT WORK.



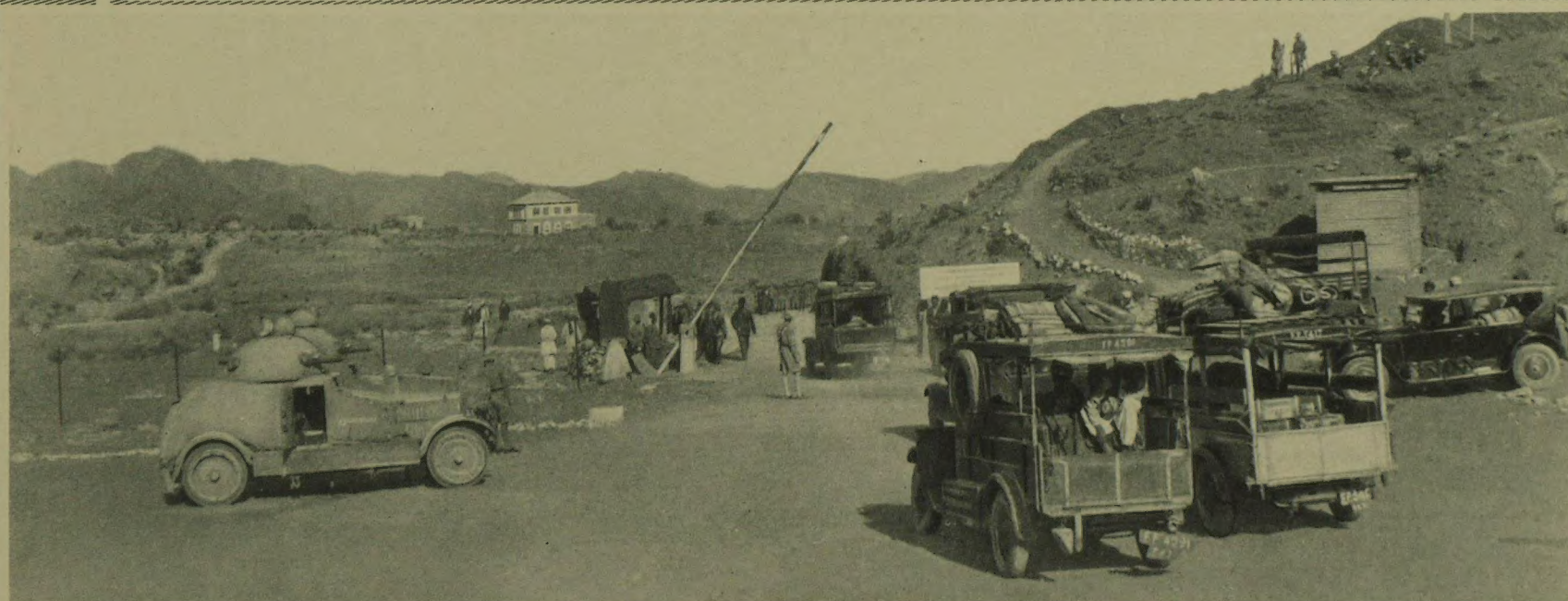
A RECENT SHIPMENT OF ARMS AND AMMUNITION TO AFGHANISTAN: LORRIES AT LANDI KOTAL STATION, UNDER MILITARY GUARD.



THE G.O.C. LANDI KOTAL BRIGADE (SECOND FROM RIGHT), THE POLITICAL TESSELDAR, AND AFGHAN OFFICIALS, INSPECTING THE AFGHAN GUARD.



THE FRONTIER WITH THE GATE CLOSED, JUST BEFORE THE CONVOY PASSED THROUGH: A VIEW SHOWING THE BAR IN POSITION ACROSS THE ROAD, WITH TROOPS ON GUARD, AND A NOTICE-BOARD (ON THE RIGHT) STATING REGULATIONS.

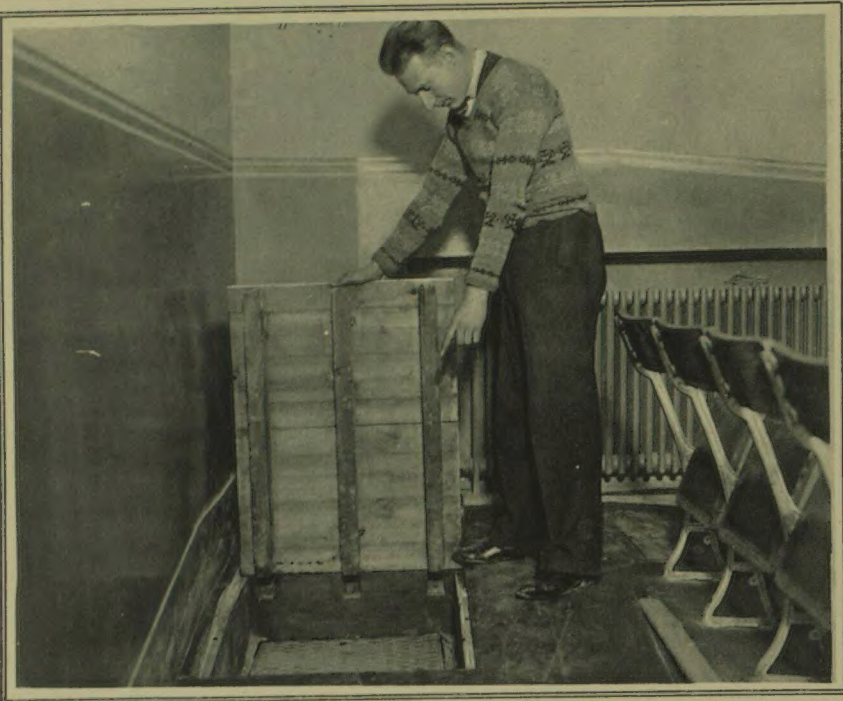


THE CONVOY, UNDER THE PROTECTION OF THE ARMoured CARS, MOVES ACROSS THE BORDER AND MAKES FOR KABUL: A TYPICAL SCENE DURING THE RECENT CONVEYANCE OF ARMS AND AMMUNITION INTO AFGHANISTAN.

These interesting photographs, which were despatched to us from Landi Kotal, in the Khyber Pass, on December 18 last, illustrate (in the sender's words) "a recent shipment of arms and ammunition to Afghanistan." Regarding the defences of that country, the 1930 edition of "The Statesman's Year-Book" says: "Owing to civil war in 1928-9 the organisation of the Afghan army has been broken up. In normal times, in addition to a standing army numbering about 25,000 all arms, the King can count on the support of large numbers of well-armed tribesmen. The regular army is recruited on the *Hasht Nafari* system, by which one in every eight of the able-bodied population is conscripted for service. The army

generally is trained and organised more on the lines of a gendarmerie than of a modern army. Officers graduate at a military college, but recently large batches of cadets have been sent to foreign capitals to undergo training, particularly to Turkey, and Turkish influence may be said to predominate in the army. A small air force is maintained. The present King of Afghanistan, Nadir Khan, came to the throne in October 1929." At Landi Kotal there is a station on the Khyber Railway, which at that point runs at a height of about 3500 feet. Our readers will remember that we have twice recently illustrated the reorganised Afghan army. King Nadir has taken strong measures to discourage tribal disturbances.

FROM THE WORLD'S SCRAP-BOOK: NEWS ITEMS OF TOPICAL INTEREST.



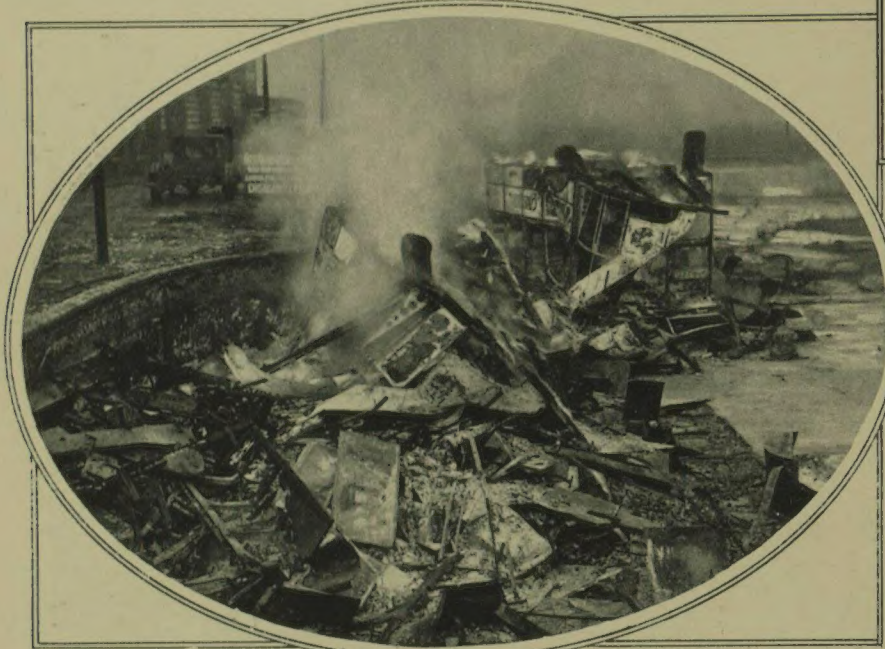
THE NEW SADLER'S WELLS THEATRE KEEPS A RELIC OF ITS PAST: THE ORIGINAL HOLY, MEDICINAL WELL PRESERVED AT THE BACK OF THE PIT.

The famous old theatre of Sadler's Wells, associated with Edmund Kean and Samuel Phelps, after being long derelict, has now been rebuilt, to run in conjunction with the Old Vic. It was reopened on January 6 (Twelfth Night) with Shakespeare's play of that name—just fifty years after the reformed Old Vic had been opened on Boxing Day, 1880. The original well, which gave Sadler's Wells Theatre its name, is preserved behind the pit, guarded by an iron plate. It was a mediæval holy well, and was rediscovered in 1683 by one Sadler, who bought the site for "a musick house." He made a fortune from the supply of medicinal waters, wine to counteract the taste, and musical diversion.



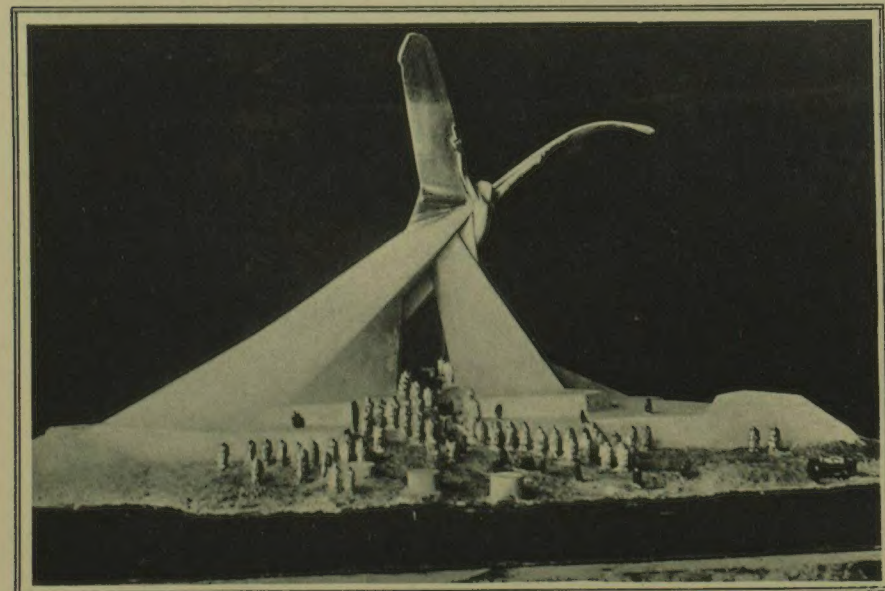
SIGNS OF DISTRESS IN THE UNITED STATES: A FOOD QUEUE IN NEW YORK, WHERE DISTURBANCES HAVE RECENTLY TAKEN PLACE.

It was reported from New York that on January 8 police seaplanes, with tear-gas bombs, were cruising over Brooklyn in readiness to suppress threatened food-riots. Demonstrators tried to rush a Salvation Army depot, containing stocks of food and clothing, and were dispersed by police. Our photograph shows (says a New York paper) "some of the 6500 hungry who came to the municipal lodging-house in East 25th Street" at Christmas.

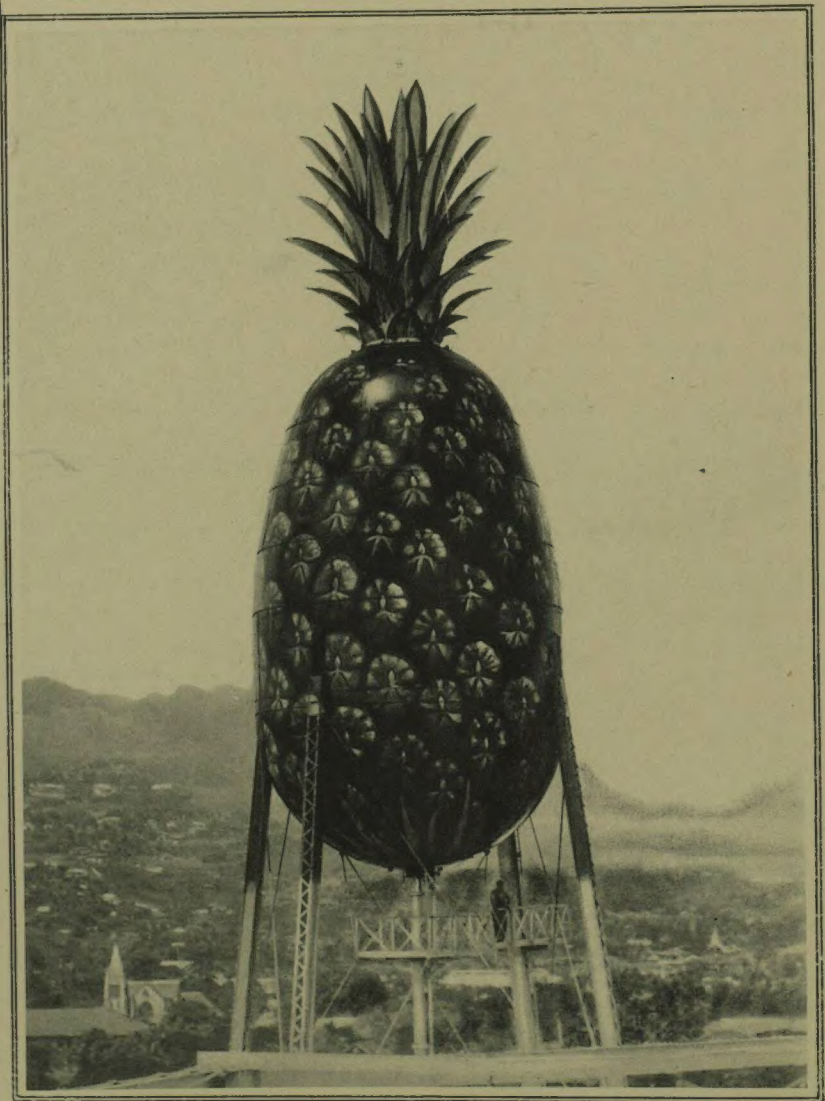


A BONFIRE OF OLD LONDON MOTOR-BUSES: OBSOLETE VEHICLES OF THE L.G.O.C. BEING BURNT AT EARL'S COURT.

The London General Omnibus Company has recently discarded many of its older vehicles, and some of them have been burnt in the former exhibition grounds at Earl's Court, as shown in our photograph. It was stated not long ago that buses of the "K" type, with open tops, would shortly disappear from the streets of London, as those with a covered roof had proved so much more popular.



DESIGNED TO COMMEMORATE THE HISTORIC BATTLE ASSOCIATED WITH THE LATE MARSHAL JOFFRE: A REMARKABLE MODEL APPROVED FOR THE MARNE MEMORIAL. This striking model, it is reported, was recently approved by the French committee entrusted with setting up a monument to commemorate the Battle of the Marne. The design, which is on a gigantic scale, represents a figure with outstretched wings. It is the work of M. Henri Sauvage, very modern in style. The late Marshal Joffre, it may be recalled, was known as the Victor of the Marne.



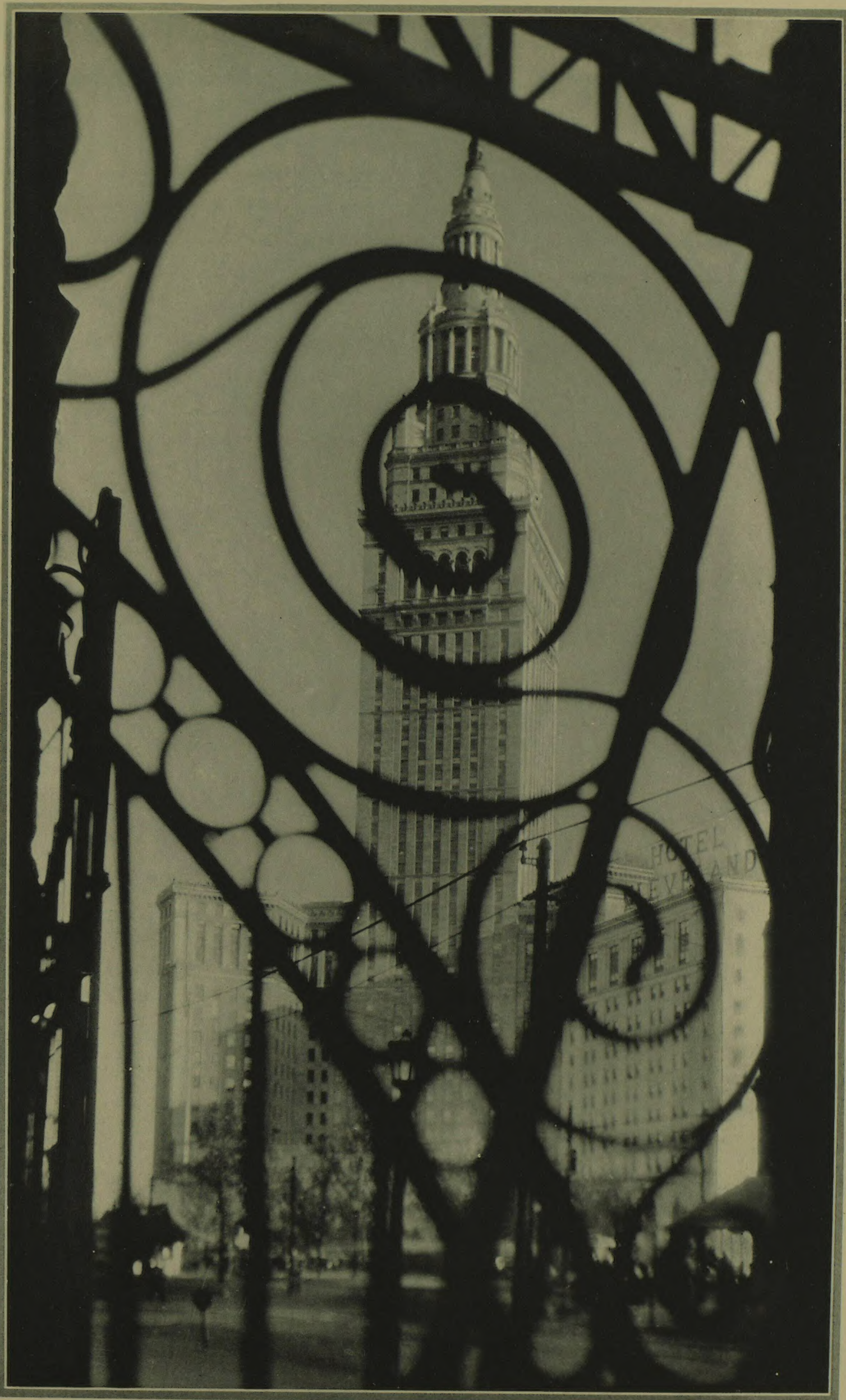
THE LARGEST "PINEAPPLE" IN THE WORLD: A STRANGE WATER-CISTERN IN HAWAII, DWARFING THE MAN SEEN BELOW TO PIGMY SIZE.

An interesting explanatory note is supplied in connection with the photograph reproduced above. "The world's largest pineapple" (it states), "which is used as a water-tower, is located on the James Dole Hawaiian Pineapple Cannery, in the Hawaiian Islands." Its dimensions can be gauged by comparing it with the diminutive size of the man on the platform below.

A Symbol of Our Time.

PHOTOGRAPH BY
MARGARET BOURKE-
WHITE.

THERE has been a great deal of discussion for a long time past as to the best methods of relieving the congestion of traffic in London, and other big cities, which, as everyone agrees, has reached a point that is rapidly becoming intolerable. One obvious suggestion, of course, has been that many of the principal thoroughfares should be widened. The widening of streets, however, would of necessity involve a reduction in the ground-area of the buildings that front them, and the only possible means of replacing such a loss in area would be to make the buildings higher. Thus we are led to contemplate the possibility of central London, at least, becoming a city of sky-scrapers.

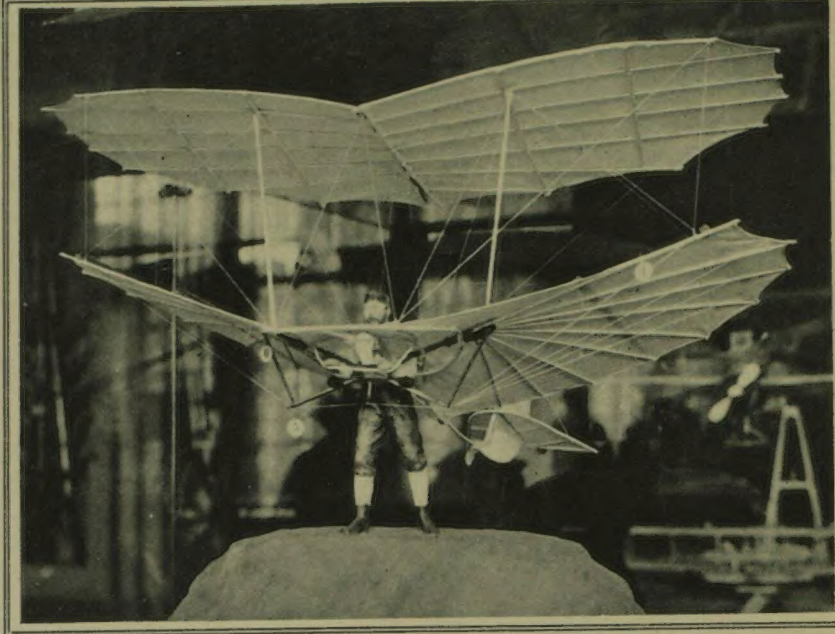


IS LONDON TO HAVE SOARING ARCHITECTURE, TO AID STREET-WIDENING FOR THE RELIEF OF TRAFFIC CONGESTION?
A TYPICAL AMERICAN SKY-SCRAPER—THE TERMINAL TOWER AT CLEVELAND, OHIO, IN A PICTURESQUE SETTING.

THE CAMERA AS RECORDER: NEWS BY PHOTOGRAPHY.

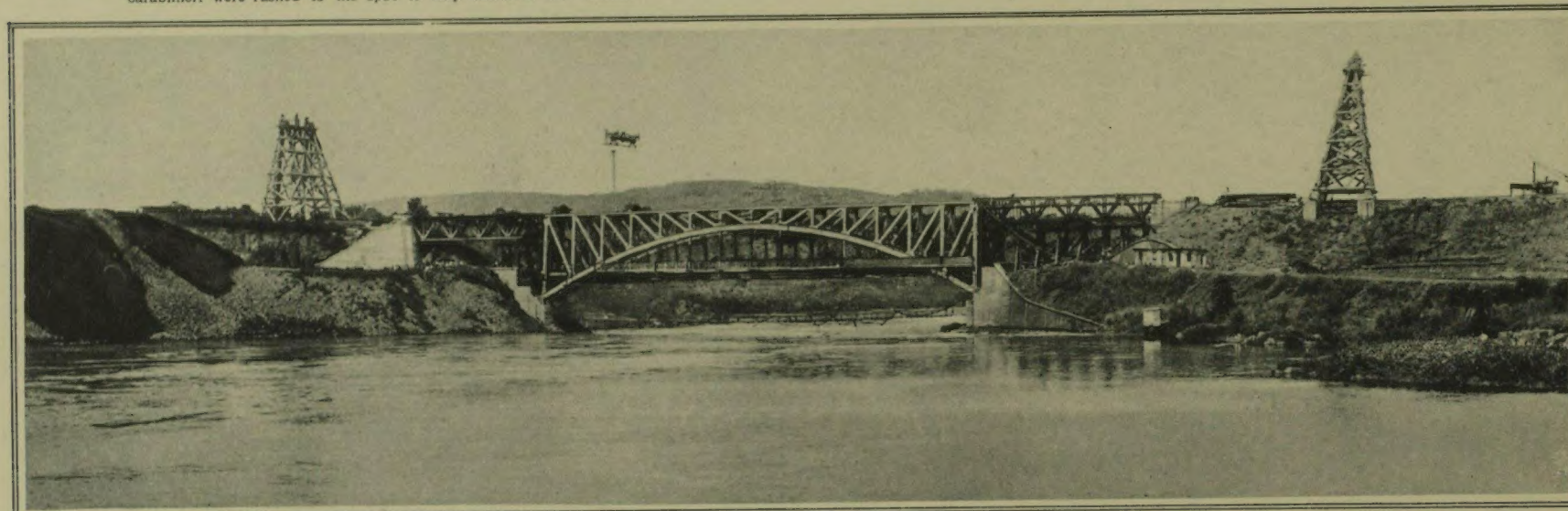


AFTER A DISASTROUS LANDSLIDE WHICH CAUSED THE LOSS OF SEVERAL LIVES: DEVASTATION AT LECCO, IN LOMBARDY; WITH FIREMEN SEARCHING FOR VICTIMS. Three people were buried alive and several are missing, believed dead, through the fall of a huge mass of rock from Monte San Martino, which recently wrecked a number of houses in a hamlet near Lecco, in Lombardy. (The lake of Lecco forms a branch of Lake Como.) Firemen and carabinieri were rushed to the spot to help extricate the victims.



A MODEL OF ONE OF THE WORLD'S FIRST GLIDERS: OTTO LILIENTHAL ABOUT TO LAUNCH INTO THE AIR IN ONE OF HIS WEIRD MACHINES.

Otto Lilienthal's was a famous name among the earliest exponents of the art of gliding. After he had accumulated much information from a study of the flight of birds, and made over 2000 glides in safety, in 1896 his machine was upset by a sudden gust of wind, and he was killed near Rhinow. The Berlin Armoury (Zeughaus) has secured one of his few existing gliders.



AN UNDERTAKING WHICH WILL OPEN UP NEW TRACTS FOR SETTLEMENT AND DEVELOPMENT IN UGANDA: THE NEW NILE BRIDGE AT JINJA, NEAR LAKE VICTORIA—THE ONLY BRIDGE OVER THE RIVER ABOVE KOSTI, IN SUDAN, 1300 MILES AWAY.

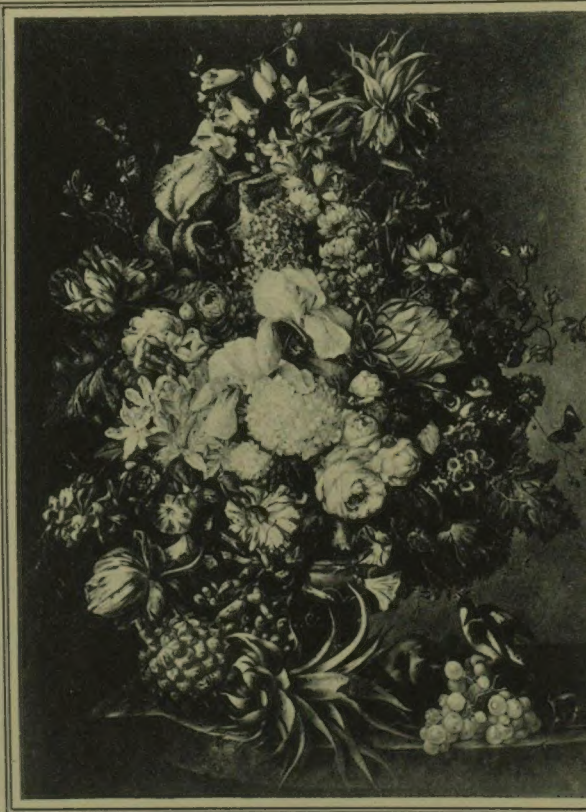
On January 14 the new road and rail bridge across the Nile at Jinja was ready to be opened. It spans the river just below Ripon Falls, where the Nile leaves Lake Victoria, and is the only bridge over the river between there and Kosti, near Khartum, a distance of 1300 miles. At the same time an extension of the Kenya and Uganda Railway Main Line will be opened to Kampala, the chief commercial centre of Uganda, which will thus be put into direct communication

with Mombasa, in the Indian Ocean. This eastern province of Uganda, although it produces the major part of the cotton crop, has hitherto been divided from the western half of the Protectorate by the natural barrier of the Nile and Lakes Kioga and Kwana. It is a district which already produces sugar, power alcohol, coffee, rubber, and timber. The bridge itself is 260 ft. long. The railway is carried on top and a 20-ft. roadway is suspended below.



AN HISTORIC PICTURE UNDER THE HAMMER IN BERLIN: MENZEL'S "HOFBALL IN RHEINSBERG"; FROM THE MAX BÖHM COLLECTION. (31 BY 41 CM.)

The famous Max Böhm collection of pictures is to come under the hammer on January 28. It contains masterpieces by most of the great German painters of the nineteenth century. Böcklin, for instance, is represented by the "Battle of the Centaurs"; Leibl by five portraits; and Menzel by two scenes from the Court of Frederick the Great, one of which we illustrate. Besides these, such names as Spitzweg, Feuerbach, Knaus, Thoma, Schuch, Corinth, and Slevogt figure largely.

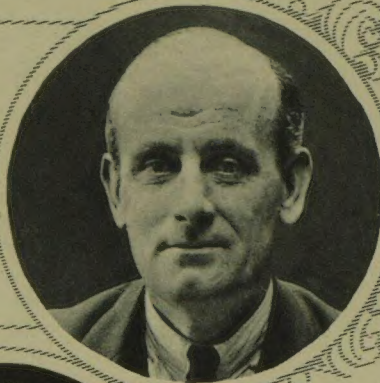


A LOT IN THE MAX BÖHM SALE: "BLUMENSTILLEBEN"; BY FRANZ XAVER PETTER. (95 BY 71.5 CM.)

Especially remarkable is the collection by Wilhelm Trübner; while among the fifteen examples from Max Liebermann's brush are to be found some of his most renowned and beautiful works. The collection is being disposed of by Messrs. Rudolph Lepke, of the Potsdamerstrasse, Berlin, W.3. The great German historical artist, Menzel, will probably be best known to English readers through the wood-engravings he made to illustrate Franz Kugler's "Life of Frederick the Great."

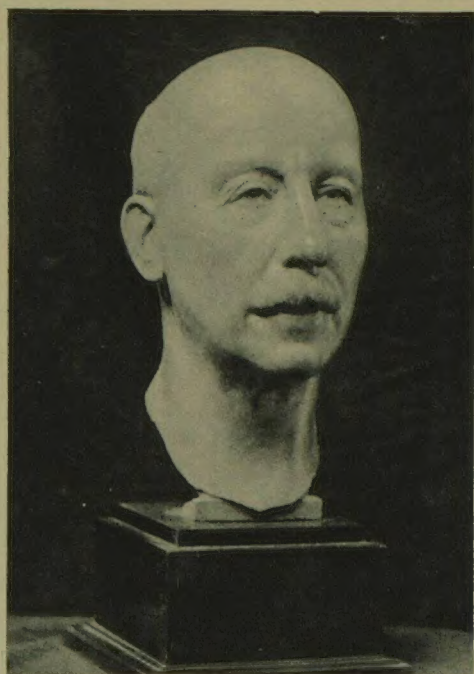
PERSONALITIES OF THE WEEK:

MR. JOHN ALLAN.
Appointed Keeper of the Department of Coins and Medals, British Museum, in succession to Dr. G. F. Hill, now Director of the Museum. Entered the Museum, 1907. An authority on Oriental coins. Aged forty-six.



SIR OTTO NIEMAYER, G.B.E.

The great financial expert. Recently returned from a mission of financial reorganisation in Australia; and will now go to Brazil on a similar mission. The news caused a rise in Brazilian Bonds.

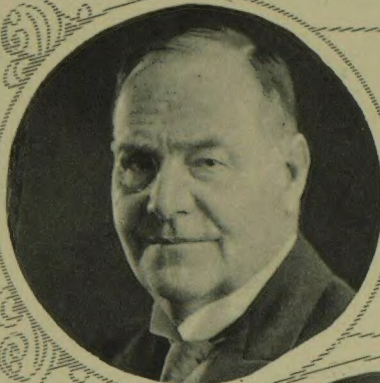


TO BE PRESENTED TO SIR FREDERICK KENYON: A REPLICA OF THE ORIGINAL BUST OF HIMSELF IN THE BOARD ROOM OF THE BRITISH MUSEUM.
Sir Frederick Kenyon, it will be remembered, retired from the British Museum, and was succeeded by Dr. G. F. Hill. Above is seen the bust which will be presented to the retiring Director; sculptured by Mr. J. A. Stevenson. The original is to be placed in the Board Room of the Museum, with the portraits of Sir Frederick's predecessors.

PEOPLE IN THE PUBLIC EYE.

SIR CHARLES MARSTON.

Financed Jericho excavations (see pages 94 to 97). Largely responsible for all British archaeological work in Near East. Member of House of Laity of Church Assembly. Author of "Essays on the Old Testament."



PROFESSOR JOHN GARSTANG, D.Sc., F.S.A.

Famous archaeologist conducting Jericho excavations. Professor of Archaeology, Liverpool University. Formerly Director, British School of Archaeology, Jerusalem, and Director, Department of Antiquities, Palestine.



THE CARGO-CARRYING ATLANTIC FLIGHT: MRS. BERYL HART AND CAPT. WILLIAM S. MACLAREN WITH THEIR MACHINE.

The aeroplane "Trade Wind," carrying 200 lb. of food-stuffs and a sack of mail, left New York on January 7, on its second start in the attempt to fly the Atlantic with a cargo, to demonstrate that a paying air service could be maintained between the U.S.A. and Europe. At the time of writing, the "Trade Wind" is missing.



WITH HIS ARM IN A SLING: SIR GEOFFREY DE MONTMORENCY AFTER THE ATTEMPT ON HIS LIFE.

Sir Geoffrey de Montmorency, Governor of the Punjab, was fired at and wounded in Lahore, on December 23. Above he is seen at the Lahore Races; well, but with his arm still in a sling.



THE GOVERNOR-GENERAL DESIGNATE OF SOUTH AFRICA SAILS: (L. TO R.) LADY JOAN VILLIERS; LADY CLARENDON; THE HON WILLIAM VILLIERS; LORD CLARENDON.

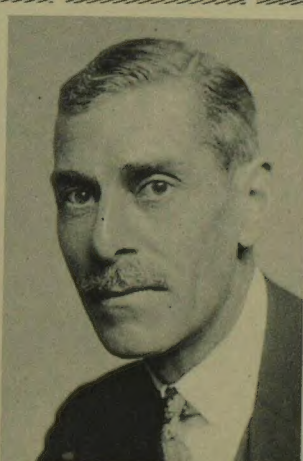
Lord Clarendon, Governor-General designate of the Union of South Africa, left London on January 9 for South Africa, where he succeeds Lord Athlone. He was accompanied by Lady Clarendon, Lord Hyde, Lady Joan Villiers, the Hon. William Villiers, and Lord Sudley, his aide-de-camp. Lord Clarendon sailed from Southampton in the liner "Arundel Castle."



SIR JOSEPH HOOD, BT.
Born, 1863; died, January 11. Mayor of Wimbledon, and M.P. (Unionist), 1918-1924. A generous public benefactor to Wimbledon and Morden. Helped to form British-America Tobacco Company. Created Baronet, 1922.



MR. E. M. AMPHLETT.
Born, 1867; died, January 10. Journalist and fencer. On the old "Echo." Joined the Parliamentary staff of the "Times," 1899. Represented Great Britain at the Olympic Games in fencing, 1908, 1912, 1924.



LIEUT.-COL. SIR GEORGE STEWART SYMES.
Resident at Aden. Has been appointed Governor of Tanganyika, E. Africa, in succession to Sir Donald Charles Cameron, who is new Governor of Nigeria, W. Africa.



SEÑOR DON HARMODIO AROSEMENA.
Appointed President of Panama, 1928. Deposed January 2 last by a revolution led by Señor Don Arias, on the grounds that he was establishing a virtual dictatorship.



DON RICARDO ALFARO.
Minister of Panama at Washington. Accepted the Panama Presidency after the abdication of Señor Arosemena. Formerly Minister of Foreign Affairs and of Justice. All is now reported quiet in Panama.



THE WORLD OF SCIENCE.



A FISH IN COAT OF MAIL.

By W. P. PYCRAFT, F.Z.S., Author of "Camouflage in Nature," "The Courtship of Animals," "Random Gleanings from Nature's Fields," etc.

WHEN I was making notes the other day on that queer-looking fish, the American gar-pike (*Lepidosteus osseus*), in our wonderful Aquarium at the "Zoo," a man, evidently from the North, turned to me and asked, "Is it rouser?" Thinking that I had misunderstood him, I asked him to repeat his question. When I replied "No, it is alive," he remarked: "Eigh, and oo's p-e-i-g-n-t-e-d it?" To which I had to reply that it had not been painted, and that he would find many much more brilliantly coloured fishes here than this. Yet I do not wonder that this fish had rivetted his attention, for it has

platysomus, the "short-nosed gar-pike"; and the "great," or "alligator-gar," *L. viridis*; and all are inhabitants of fresh water.

The first-named species, remarkable for its long snout, is fairly abundant in the rivers and lakes of North America, from Vermont to the Rio Grande, and may attain to a length of as much as five feet. The short-nosed species is common throughout the Mississippi Valley, and seldom exceeds three feet in length. The great, or alligator-gar, has a more southerly habitat, frequenting the rivers of

the Southern States, Northern Mexico, and Cuba; it is by far the larger species, attaining to a length, according to the late W. Starr Jordan, the great American ichthyologist, of "twenty feet or more." He is hence to be regarded as the giant of his tribe.

They are all voracious fishes, and worthless as food; hence they are destroyed mercilessly by fishermen. They are, however, of sluggish habits, a fact indicated by the specimens in the "Zoo" Aquarium, for they rarely move. But the interest of these fishes

surround this rod. Finally, in regard to anatomical details, the air-bladder of *Lepidosteus* is remarkable for the fact that its inner surface is spongy, and richly supplied with blood-vessels, thus serving, to some extent, as a respiratory organ. This accounts for the habit of these fishes of rising to the surface to expel air either from the mouth or gill-openings. But, having this organ less developed than in the "lung-fishes," like the African *Protopterus*, the South American *Lepidosiren*, or the Australian *Ceratodus*, they cannot live long in foul water.

Of the habits of the several species of *Lepidosteus* we have still much to learn. In the breeding season, which begins about May, they betake themselves to shallower waters, where the temperature is higher, each female being accompanied by from one to four males.

The eggs have an extremely sticky outer coat, which adheres tenaciously to the rocks and stones amid which they are deposited. The embryos hatch out within a few days, and present some interesting features. To begin with, they start with such an enormous supply of food-yolk that free movement, on account of its bulk and weight, is so greatly hampered that to prevent themselves being carried away by the stream they have to come to anchor by means of a great sucker round the mouth.

At this stage, it is to be remarked, these larvæ show no trace of scales or of the external gills, so conspicuous in some other larval fish. Another point of interest is the great fin which runs round the hinder-end of the body. It is formed solely of an upstanding, transparent membrane. And within this there presently appear the rudiments of the fins, dorsal, caudal, and anal, seen in the adult fish. These fins are formed of bony rods between which a delicate membrane is stretched. At

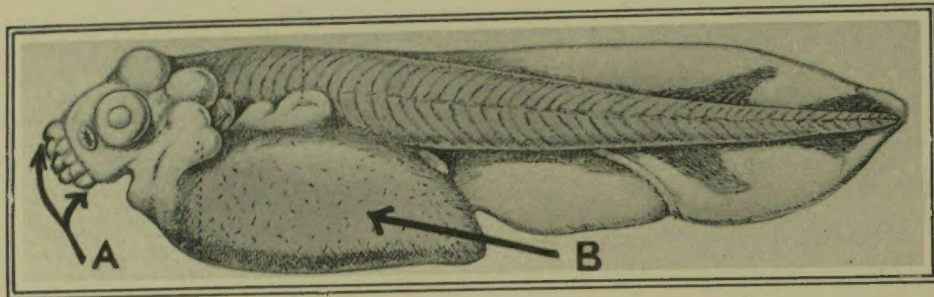


FIG. 1.—A LARVAL *LEPIDOSTEUS*: A PHOTOGRAPH IN WHICH THE TYPICAL SUCKER (A) AND ENORMOUS YOLK-BAG (B) CAN BE CLEARLY SEEN.

The enormous bag of yolk which must be absorbed before the youngster can move freely about, and the sucker by which the body is anchored during this time, are conspicuous features. The larval tail-fin, within which the dorsal, anal, and caudal fins are developed, should also be noted. The rudiments of these fins are seen within the membrane.

a rather weird appearance. But, more than this, it is one of the most remarkable of living fishes. A glance at the accompanying photograph (Fig. 3) will show that this living fossil, as it may well be called, is not unlike, in its general appearance, our own "gar-pike" (*Belone*). But the likeness is only superficial, for *Lepidosteus*, both externally and internally, is profoundly different.

To begin with, in our gar-pike the body appears, at first sight, to be scaleless, so small and thin are the scales; while in *Lepidosteus* the scales are unusually conspicuous. And when they come to be carefully examined, they are found to be scales of a quite singular type, for they constitute a dense armature of closely-packed, quadrate nodules of bone covered with enamel. In the photograph they appear as oblique bands encircling the body. Each band, it will be noticed, appears to be formed of closely-set square plates. The minute structure of these scales is of too complicated a nature to be described here; but it is worth remembering that, on their first appearance in the young fish, their enamelled surfaces are studded with tooth-like spines, which disappear later. There are very few fish to-day possessing such scales. The *Polypterus* of the Nile—which must form the theme of another essay—is one of them. But millions of years ago the sea swarmed with fishes thus armed. One of these, *Lepidosteus mantelli*, from the Wealden of Sussex (Lower Cretaceous), is shown in Fig. 2. Under the tail one of the scales is shown. This, unlike that of *Lepidosteus*, is sculptured. The margin on the right presents two pegs, which interlocked with the neighbouring scale. A similar mechanism is found on the scales of *Lepidosteus*.

Although *Lepidosteus* wears an armour-plating that was introduced ages ago, its own ancestor can be traced back no further than the Eocene. But even that is a respectable antiquity, since it is to be measured in millions of years. And in those far-off days it enjoyed a vastly wider geographical range, inasmuch as it swarmed then in the waters of Europe. The earliest-known remains, indeed, are from the Lower Eocene of Reims, France. The latest dates from the Lower Miocene of Messel, near Darmstadt. But even in Eocene times the range of the bony gar-pike was wide; for not only was it at home in Europe, but by then it had also spread to the New World, for its remains have been found in the Green-River Shales of Wyoming. But, since these ancient members of the tribe had slightly different teeth, they are placed by some authorities in a separate genus—*Cladodus*. What happened between the days when the Green-River Shales were being laid down and "to-day" we do not know, but that there was a continuous succession of generations between these "primitive fathers" and their living descendants in North America is certain. Three distinct species survive to-day—*Lepidosteus osseus*, the "long-nosed gar-pike"; *L.*

fishermen. They are, however, of sluggish habits, a fact indicated by the specimens in the "Zoo" Aquarium, for they rarely move. But the interest of these fishes does not begin and end with their external appearance, for they present some striking internal peculiarities. And this is specially true of the vertebral column, which differs from that of all other fishes in that the separate vertebrae are connected by ball-and-socket joints of what is known as the "opisthocœlous" type, wherein the anterior face of the centrum, or body of the vertebra, is spheroidal, while the posterior face is cup-shaped. In almost all other fishes the vertebrae are what is known as "amphicœlous," or double-cupped, the cavity enclosed between any two vertebrae being filled by a gelatinous substance representing the remains of the primitive notochord—the elastic rod which formed the "backbone" of the primitive fishes. Round this, as in the sharks, bone is deposited to give greater strength. In many of the more primitive living fishes, indeed, only cartilaginous plates

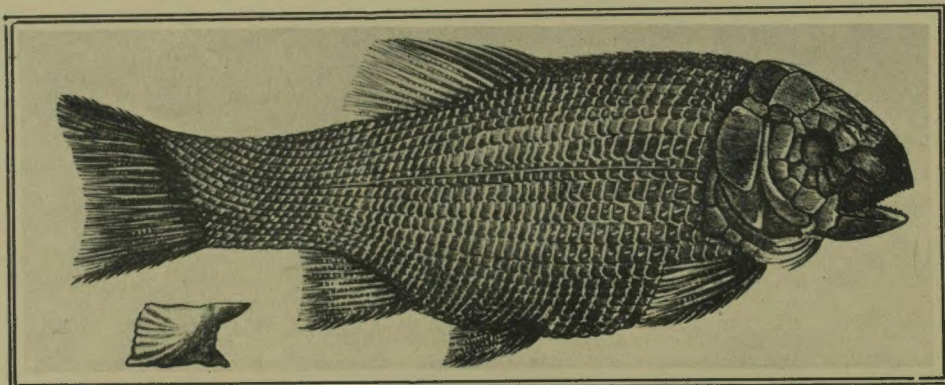


FIG. 2.—AN ANCESTOR OF THE AMERICAN *LEPIDOSTEUS* FOUND IN SUSSEX: THE FOSSIL-FISH *LEPIDOSTEUS MANTELLI*.

This figure shows one of the early enamel-scaled fishes, a type represented to-day by the American *Lepidosteus* and the African *Polypterus*. The scales—one of which is shown enlarged under the tail—are masses of bone covered with enamel and interlocked by means of pegs.

the stage shown in Fig. 1, it will be noticed that the skeleton of the tail runs directly backwards, and that its fin is divided into two sections. The nature of the changes which take place before the tail-fin of the adult, as seen in Fig. 3, comes into being would make a story in itself. It is too long to be told here, for it cannot be told without taking into account the evolution of the tail from the lowest-known fishes upwards.

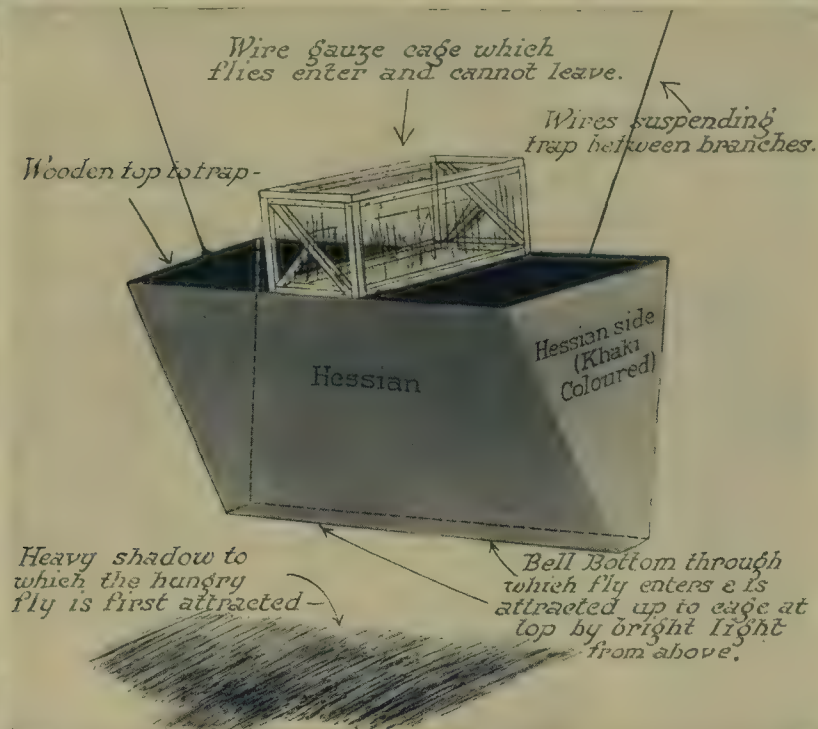
But this by the way. In the course of about a fortnight, the food-yolk just referred to has been consumed, and the young, now free to move, release their hold by the sucker and proceed to live an active life, feeding now by the mouth in the normal way. For a time they unconsciously confer great benefit on the human population living in the neighbourhood, for they live exclusively on the larvæ of mosquitoes. But this, apparently, sums up the benefits they ever confer on man, for as soon as they are big enough they commence to eat young fishes, which, with crayfish, constitute their sole diet for the rest of their lives. However, we must not be too sure that this diet is partaken of entirely at man's expense. Fishermen are rather prone to regard all fish-eaters save themselves as pests. A careful analysis of that diet might well show that they consume some of the enemies of "food-fishes," which are the only concern of the angler and the fishing industry generally.



FIG. 3.—A LIVING "FOSSIL": THE LONG-NOSED GAR-PIKE (*LEPIDOSTEUS OSSEUS*)—AN AMERICAN FISH WHICH HAS INHERITED ITS PECULIAR COAT OF MAIL FROM AN ANCESTOR OF THE EOCENE AGE.

This singular fish (which may be seen at the Zoological Society's Aquarium in London) is one of a very few living species which have the body covered by large, quadrate, bony, enamel-covered scales. When fully adult, it attains to a length of about five feet.

REMOVING A BAR TO AFRICA'S PROGRESS: A LIGHT-AND-SHADE TRAP FOR THE TSETSE FLY.



A NEW INVENTION DESIGNED TO RID AFRICA OF A DEVASTATING SCOURGE: THE HARRIS TSETSE-FLY TRAP—BASED ON THE FLY'S REACTION TO LIGHT AND SHADE, AND ROUGHLY RESEMBLING THE SHAPE OF AN ANIMAL.

WE illustrate here an invention which, if it fulfils expectations, may greatly hasten the progress of Africa. Mr. G. W. R. Le Mare writes: "Seven years of entomological research culminated recently with the demonstration of the Harris tsetse-fly trap in the Hluhluwe Game Reserve, in the heart of Zululand. This trap may be the means of ridding Africa of two of her greatest scourges—human sleeping sickness, which claims thousands of lives annually; and nagana, the disease which is 100 per cent. fatal to horses and cattle. Both diseases have laid waste vast tracts of fertile land in the continent, and are the bar to any future development. The trap is the invention of Mr. R. H. T. P. Harris, Government Entomologist, who for seven years has sought for an effective means to destroy the tsetse fly, the carrier of the diseases. It was early established that the wild game, which, strangely, does not succumb to the disease, was the source of infection. The blood-sucking fly feeds on the game and absorbs the disease parasites, which it passes on to the cattle or horses it subsequently feeds on. Zululand settlements border the game reserves, and attempts to confine the game, and with it the tsetse fly, to the reserves failed. Mr. Harris, therefore, sought a more direct method of control. He discovered that the tsetse fly hunts by sight and not by scent, and in early investigations he used dummy animals painted with a vegetable poison which attacked and killed the blood-suckers through the pads of their feet. This, however, proved uneconomical. Then he evolved the trap. It is essentially simple, easy to make, and easy to maintain. It is based on the reaction of the short-sighted tsetse to light and shade—a fact realised before, but only fully explored by Mr. Harris. He observed that the fly rests in deep shade and darts out into light, and from light into shade again—the shade being the dark bulk and shadow of a beast. He therefore built a trap conforming roughly to the outline of a beast, and suspended it in a bushy glade where the strong sunlight made highly contrasting light and shade. And this was the result: the flies were attracted to the dark, shadowy bulk of the trap, settling low down on it. Through the open bell-bottom a shaft of light shone down through the gauze cage on top of

[Continued below.]



WITH A TOP CAGE ALLOWING NO ESCAPE: A HARRIS TSETSE-FLY TRAP BEING SET IN THE HLUHLUWE GAME RESERVE, ZULULAND, WHERE IT WAS RECENTLY DEMONSTRATED TO AUTHORITIES AND ENTOMOLOGISTS.



AN EARLIER METHOD OF DESTROYING TSETSE FLY DISCARDED AS BEING UNECONOMICAL: A DUMMY BUCK SET UP IN THE AFRICAN BUSH, WITH A VEGETABLE POISON PAINTED OVER ITS BODY AND LEGS.



PARTICULARLY ATTRACTIVE TO FEMALES OF THE SPECIES: A HARRIS TRAP INVERTED, SHOWING THE NARROW ENTRANCE-SLIT IN THE OPEN "BELL" BOTTOM, ON ENTERING WHICH TSETSE FLIES ARE LURED UPWARD BY LIGHT TO THE CAGE ON TOP.

[Continued.]

the trap. To this light the tsetse flies were attracted, and passed up into the one-way cage, there to perish. Nature provided undertakers—ants cleared away the bodies. During five days the experimental trap captured over 700 flies, and at the Hluhluwe Reserve demonstration seventeen traps accounted for over 2000 flies in one day. One most important feature of the trap is that, for some reason yet unexplained, it has a strange fascination for females. In most of the catches females outnumbered males by 80 per cent. Obviously, wide use of the traps must greatly upset the natural balance of the sexes and prove fatal to the survival of any species. Entomologists and veterinary experts acclaimed the trap as the greatest contribution to tsetse-fly research and control yet made, and it remains now for the final experiments to be carried out before the trap is adopted all through the Zululand fly-belt and in the stricken areas of Rhodesia and Central Africa."

BOOKS OF THE DAY.

JUST lately I have had occasion to examine the state of my knowledge—or perhaps I should say, the depth of my ignorance—regarding the arts of Persia, for reasons connected with certain happenings at the Royal Academy, of which our readers have not been left wholly uninformed. Hitherto I have seen the Persian past mainly through the eyes of ancient Greeks and Romans. Time was when I had a nodding acquaintance with the "Persæ" of Æschylus, and learnt from Herodotus something of those wars wherein

A king sat on the rocky brow
That looks o'er sea-born Salamis:

likewise of those later wars when Xenophon's mercenaries shouted with joy at sight of the sea, after the long march homeward from serving a Persian master. I have been reminded, too, of Horace and his "Persicos odi, puer, apparatus"—an opinion he might revise if he could now visit Burlington House. In English literature, Matthew Arnold's "Sohrab and Rustum," and Edward Fitzgerald's "Rubaiyat of Omar Khayyam," practically exhaust my reading on Persian letters and legend. Once, indeed (as a back number of the *Outlook* would reveal), I perpetrated myself some lines upon a rose of Persia, piously brought from Omar's grave at Naishapur and planted in English soil on that of him

Who made the blossom of an
Eastern rhyme
Anew from buds of Western song
unfused.

If, therefore, I cannot pose as an authority on Persian art, I can at least claim to enter the august portals in Piccadilly with preconceived sympathy. I can admire its far-sent treasures with that sense of wonder which any right-minded Westerner feels for the exotic beauty of the East, as, for example, when he is privileged to stroke a Persian cat royally reposing upon a Persian rug.

Wonder is hardly enough, however, for a proper appreciation of such an exhibition as London now boasts. There is need also of some intelligent understanding, and several publishers have kindly provided the means of acquiring it. Of the books I have seen, the best and handiest popular account of Persian culture in general, I should say, is the work of an eminent Orientalist, namely, "THE PERSIANS." By Sir E. Denison Ross. Illustrated (Oxford University Press, and Humphrey Milford; 5s.). Here, in a compact form, including many excellent photographs, we have a historical outline and descriptive itinerary to the principal towns and ruins, with chapters on the country and its people, Persian art, and Persian literature.

The distinguished author, who is Director of the School of Oriental Studies and Professor of Persian in the University of London, acknowledges the late Lord Curzon's book, "Persia and the Persian Question" (published in 1892, and now out of print), as "a masterpiece" which "still remains the indispensable guide for the traveller, and the best work of reference for the student." Explaining his own aim, Sir Denison Ross says: "The task I set myself in preparing this little book was not to produce an up-to-date abridgment of Lord Curzon's work, or to write an exhaustive history of Persia and her civilisation, but rather to make Persia more of a reality to the general reader, and to give him that familiarity with its history and geography which will enable him to think of Persia, not as some strange remote land, but as one as real and living as any country nearer home."

In his chapter on Persian literature, Sir Denison Ross discusses the difficulty of rendering poetry in another language, and it is comforting to learn from so high an authority that Edward Fitzgerald's version of Omar is really close to the original—a point on which I have often seen doubt expressed. "The nearest approach," he writes, "to the original poem known to me in any translation is offered by Fitzgerald's Rubaiyat; but it must be remembered that this poetic form, by reason both of its brevity and of its universal appeal, can be readily rendered into a foreign language. All other verse forms, when translated, are bound to sound strange and artificial. This is not to say that English renderings, when skilfully done, do not please; the contrary may be proved by the translations of Hafiz made by Miss Gertrude Bell, to mention no others." In Persia to-day, poets appear to enjoy a popularity (and, I hope, corresponding sales) that contrasts with conditions over here. "Indeed," writes Sir Denison Ross, "the love of poetry permeates all classes. One is never surprised to hear verses from the classic poets quoted by men in the most humble situations, like

muleteers, shepherds, and even homeless nomads." Now in London one seldom hears a taxi-driver or a bus-conductor quoting Shakespeare, nor have I known any gentleman of the road "to cite even such a kindred spirit as the author of 'The Autobiography of a Super-Tramp.'"

Two other little books owe their genesis to London's art event of the year, and should be very useful to those visiting the galleries. They differ in scope from Sir Denison's work, being restricted to the interpretation of Persian art. These two books are identical in title, but, as one is of Western and the other of Eastern origin, they afford material for interesting comparisons. The larger of the two, which is copiously illustrated, is "PERSIAN PAINTING." By Basil Gray, Assistant Keeper in the British Museum (Benn; 6s. 6d.). "My object has been," writes Mr. Gray, "in the first place, to show how very well worth looking at are these Persian miniatures, and then to provide some guidance among the succession of schools. . . .

step on the road which may in the future lead to the removal of the evil effects of the War and of propaganda which has poisoned the relationship of two nations between whom an armed conflict ought never to have been considered possible."

Dr. Rosen has evidently not confined his main interests to diplomacy, but is a keen student of human nature, and eminent as an Oriental scholar. Among his works is a new translation of Omar. One passage in his present book is particularly apposite at the moment. After mentioning that he had to come to London to read some of the most important Persian manuscripts, which were not to be found in Teheran, he says: "During my studies in the Manuscript Department of the British Museum, I made the acquaintance of a young Orientalist who was similarly engaged upon historical research. It was Mr. (now Sir) E. Denison Ross. We soon made friends, and have remained so ever since. I owe Sir Denison a great debt of gratitude for his help and advice when I was working at the publication of an old manuscript of Omar Khayyam's quatrains. . . . In my leisure hours I frequently read the verses of the great Persian poets, Firdausi, Omar Khayyam, Rumi, Saadi, Hafiz, and many others. Although all these poets lived in the Middle Ages, they appeared quite modern in a country in which a thousand years had wrought but little change. Persia is a nation of poets, and all classes, down to muleteers and housemaids, quote and delight in verses of Saadi and Hafiz."

Dr. Rosen has much to tell about notable British personalities whom he met in the East, including the late Miss Gertrude Bell, Professor Edward G. Browne (author of "A Year Amongst the Persians"), Sir Valentine Chirol, and Sir Frank Lascelles. He

also gives an amusing account of an interview between Cecil Rhodes and the ex-Kaiser. Still more to the purpose just now is a comment on the sources of Lord Curzon's book. "Talking of Persian scholars," he writes, "I must here mention General Sir Alex. and Houtum Schindler, who was looked upon as an oracle by all those to whom Persia was an object of interest and study. He asked me what I was going to do in Persia. 'Why, of course, to do the work of my Legation.' This answer by no means satisfied him. 'If you mean to do no more than that, then you needn't have come at all. Your Legation has nothing to do except write a few reports on Russia's and England's doings

here. Don't fritter your time away with trifles, but take up some subject and study it thoroughly.'

"During the interval between my first and second visits to Persia" (continues Dr. Rosen), "a rising English Member of Parliament had travelled extensively through Persia with a view to writing a book. It was Mr. Curzon—the well-known statesman, Lord Curzon of Kedleston of later days. The result of his journey was a big book of two volumes, 'Persia,' which he not very modestly, yet justly, himself designated as 'the standard book on Persia.' He owes at least nine-tenths of the information his book contains to Schindler, of whose library, and of whose many notes and unpublished books and articles he made the freest use. It has frequently been said that Curzon looted Schindler, and that he had not paid sufficient homage to the man to whom he owed his success, and without whose help he could hardly have written his work. I think this is too harsh a judgment. If Curzon had not got hold of Schindler's notes and advice, all Schindler's knowledge would have almost surely been lost to posterity. As it is, Curzon has made an excellent book of it." For my part, I am quite ready to admit that I owe my "extensive and peculiar" knowledge of Persia, mainly to the admirable volumes just reviewed.—C. E. B.



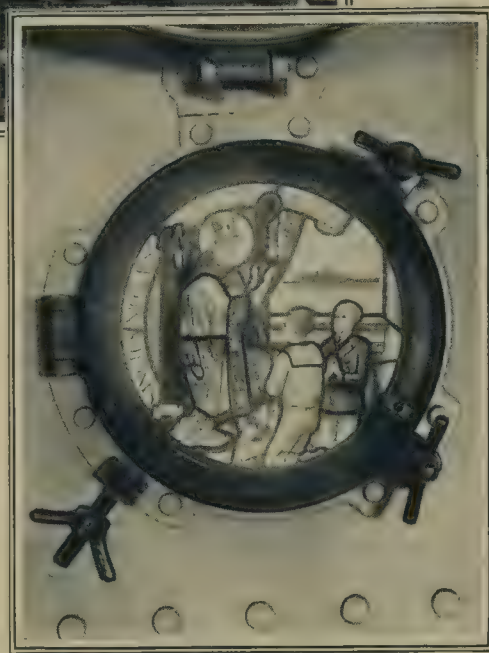
A STAINED-GLASS "WINDOW" IN A WAR-SHIP: THE PRIVATE CHAPEL OF H.M.S. "REPULSE"; SHOWING THE ALTAR, THE LECTERN, AND (ON THE LEFT) THE STAINED-GLASS PORTHOLE.

The private chapel of H.M.S. "Repulse" contains what is believed to be the only stained-glass "window" that is in a war-ship. This was given to the ship by a well-known stained-glass artist, Mr. A. K. Nicholson. It represents St. Nicholas, the patron saint of Youth, blessing a midshipman and a boy sailor. St. Nicholas was also the Patron Saint of the Medici family, whose crest is seen on the back of his throne.

The illustrations have all been chosen from English collections, both because the originals are always comparatively accessible, and because up to the present they have not been accorded sufficient prominence in general books on the subject."

The other little work above mentioned—"PERSIAN PAINTING." By Mulk Raj Anand (Faber and Faber; 1s.)—is illustrated only with a frontispiece, and in form is hardly more than a pamphlet, but the author compresses much learning and information into his forty pages. He adds a welcome "List of Persian dynasties, principal reigns, and the most famous poets and artists who flourished under them." There are people who despise dates, but personally I find them very useful, and their omission or scarcity in many books has often caused me much tribulation.

From Germany comes an interesting volume of reminiscences containing vivid pictures of life in modern Persia, as well as in Palestine, Syria, and Mesopotamia, in late Victorian times, entitled "ORIENTAL MEMORIES OF A GERMAN DIPLOMATIST." By Friedrich Rosen. With 28 illustrations (Methuen; 15s.). The author writes as one who, in former years, worked for an Anglo-German agreement, and deeply deplores what he still considers "the greatest crime and the greatest folly in history, a war between England and Germany." "In the volume," he writes, "I have related some of my experiences in Oriental countries during a period of about forty years, ending with the last century. . . . I have not included my recollections of India, Abyssinia, or Morocco, limiting myself to what is generally termed the Near East. I may relate my experiences in India, which were as pleasant as they were instructive, in a future publication. . . . I have tried not to let the shadow of a later period fall upon the time I am dealing with. If I succeed in giving a true and unbiased picture of bygone years, I hope to have made a



THE STAINED-GLASS PORTHOLE IN THE PRIVATE CHAPEL OF H.M.S. "REPULSE": ST. NICHOLAS, PATRON OF YOUTH, BLESSING A MIDSHIPMAN AND A BOY SAILOR.

From the Holiest Spot in Persia: A Loan from the Shah.



FROM THE SHRINE OF THE IMAM RIZA: A HISTORIC CARPET WHICH IS IN THE PERSIAN ART EXHIBITION AT BURLINGTON HOUSE.

This very fine carpet comes, as is noted above, from the Shrine of Imam Riza, at Meshed, the most sacred and the most carefully guarded spot in all Persia. It may justly be described as one of the most

sumptuous and impressive carpets of its period—the seventeenth century. It is reputed to have been a present from Shah Abbas. An article concerning it will be found on another page of this issue.

Glowing Persian Silk Carpets and Tissues: "Gems" at Burlington House.

REPRODUCED BY ARRANGEMENT WITH THE MEDICI SOCIETY AND BY COURTESY OF THE OWNERS.



FROM THE MAUSOLEUM OF SHAH ABBAS II.,
AT KUM: A PERSIAN SILK CARPET OF
THE LATE SEVENTEENTH CENTURY.
[Lent by the Persian Government.]

TO many of our readers, perhaps, the first idea that comes to the mind at the mention of "Persian Art" is the magic word "carpet." Owing, doubtless, to their wide distribution and their popularity, it is the wonderful carpets and fabrics which have come to be regarded by many as Persian's chief art claim to the world's admiration—even above the no less superb bronzes, enamels, glass, and countless other beautiful productions. All these kinds of objects are amply represented at the Exhibition now in being at Burlington House; but particularly magnificent is the display of antique Persian carpets and fabrics there—a display touched upon on this page. Of these exhibits, it may be noted that the first is from the tomb of Shah Abbas II. at Kum, the world-famous Mausoleum, from whence comes the great circular carpet of fabulous value. Our second reproduction is of a silk tissue lent by the Victoria and Albert Museum; while the third is from the T. L. Jacks Collection. The fourth comes from the famous shrine of Imam Riza, at Meshed, and shows the characteristic "lay-out" of a Persian garden with a stream running through; the scene is viewed as though through an archway, while the border represents tiles.



A RICH TISSUE WOVEN IN SILK AND GOLD THREAD: A PERSIAN GEM OF THE SECOND HALF OF THE SIXTEENTH CENTURY ON EXHIBITION AT BURLINGTON HOUSE.
Lent by the Victoria and Albert Museum.



DETAIL OF A LUSTROUS PERSIAN SILK TISSUE OF THE EARLY SEVENTEENTH CENTURY WHICH IS EXHIBITED AT BURLINGTON HOUSE: A FLORAL DESIGN OF EXQUISITE QUALITY WHICH IS REPEATED THROUGHOUT THE PIECE.
Lent by T. L. Jacks, Esq.



A SILKEN PERSIAN GARDEN CARPET OF THE LATE SEVENTEENTH CENTURY—FROM THE SHRINE OF IMAM RIZA, AT MESHED: A CHARACTERISTIC GARDEN WITH A STREAM RUNNING THROUGH IT, SEEN AS THOUGH THROUGH AN ARCHWAY.

"STILL SOMEWHAT MYSTERIOUS": LURISTAN BRONZE VESSELS.



A JUG DECORATED WITH APPLIED ENGRAVED
BOSSES AND AN APPLIED RELIEF FIGURE.
(26 BY 19 CM.)—A. Rabenou Collection.



A VASE, OR GOBLET, WITH CONCAVE SIDES DECORATED
WITH BANDS OF GEESSE IN RELIEF. (HEIGHT: 14.5 CM.)
A. Rabenou Collection.



A SPOUTED JUG DECORATED WITH APPLIED ENGRAVED BOSSES
AND WITH LION'S-HEAD HANDLES. (14 BY 29 CM.)
A. Rabenou Collection.

OUR readers will remember that "The Illustrated London News" published, in its issues of September 6 and 13 last, a large number of photographs of the remarkable bronzes from Luristan. We then showed such things as saddlery fittings and bits and strap rings, and some weapons. The range of these important artistic and archaeological "finds" is now further indicated by these pictures of vessels, specimens which, it should be noted, are in the Exhibition of Persian Art at Burlington House (in Gallery I.) with various other examples. The conditions under which the bronzes were discovered—the Luris are among the fiercest of the subject tribes of Persia—militated against their

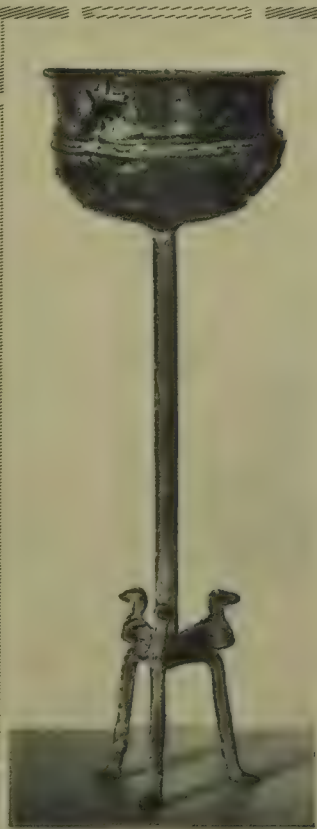
[Continued opposite.



THE BACK OF THE JUG SEEN IN THE FIRST
PHOTOGRAPH; SHOWING THE APPLIED
RELIEF FIGURE (OF AHURA MAZDA?).



A BRONZE VASE WITH CHARACTERISTIC
IBEX HANDLES THAT MAY BE CONNECTED
WITH ZOROASTRIAN SYMBOLISM. (HEIGHT:
26.7 CM.)—M. and R. Siora Collection.



A BOWL ON A TRIPOD
DECORATED WITH BIRDS.
(HEIGHT: 23 CM.)
A. Rabenou Collection.

REMARKABLE PERSIAN "FINDS" NOW IN BURLINGTON HOUSE.



A LAMP WITH A DECORATION OF AN IBEX AND LIONS.
(10 BY 19.5 CM.)
Oscar Raphael Collection.



A CUP (HERE SEEN INVERTED) DECORATED WITH A
FIGURE OF A BOWMAN IN LOW RELIEF. (12 BY 5.5 CM.)
A. Rabenou Collection.



A BOWL WHOSE PAIR OF RING HANDLES ARE CAPPED
BY IBEX HEADS. (HEIGHT: 8 CM.)—A. Rabenou Collection.

being systematically examined *in situ*. The date assigned is, therefore, vague: in the official catalogue is the following: "A large group of the recently discovered and still somewhat mysterious bronzes from Luristan. . . . No definite dating has yet been agreed upon. Estimates vary from 1400 to 400 B.C." In a recent article on the subject in "The Illustrated London News," Mr. A. Upham Pope pointed out the possible connection with Zoroastrianism of certain decorative motifs, particularly that of the horned animals—ibexes, bulls, and the like—which appear in various positions in Luristan bronze-work, and were associated with the Zoroastrian principle of Good.

STORIED SPECIMENS OF PERSIAN ART: TREASURES



A EWER SHOWING SASANIAN INFLUENCE.
"Ewer Lines" found during excavations at Bush and Malik. Remarkable on account of the Sasanian influence shown. Seventh century. 4 ft. by 28 cm.
Lent by the Musée d'Art et d'Histoire, Paris.



AN ARMLET LENT BY THE SOVIET GOVERNMENT.
This is of enameled gold, set with rubies, emeralds, and pearls. It is in the inventory of Catherine the Great.—(Lent by the Soviet Union Government.)



A SWORD PRESENTED TO THE EMPEROR NICHOLAS I.
The scabbard and hilt are of enameled gold, set with emeralds, rubies, and diamonds. The sword was presented to Nicholas I. by Path 'Ali Shah.
Lent by the Soviet Union Government.



A DISH SHOWING A NUDE FEMALE FIGURE.
This is of earthenware. "The scene refers, perhaps, to the story of Khosrau and Shirin, but the general presentation is entirely different from Shirin's bathingscene as described in Mas'udi's poem written in 117-86 A.D. The inscription round the rim says that the dish was made in 67 (1210 A.D.) by Sayyid Shams al-din al-Husaini for some Prince." Diameter 34 cm.
Lent by G. Eusebiopoulos, Esq.



AN ACHAMENID WARRIOR IN SILVER.
He wears a head-dress similar to the Cossack kaskak. Achaemenid, fourth century B.C. Found at Soli (Gözlü), 17 3/4 cm.
Lent by the Koster Friedrich Museum, Berlin.



A DAGGER WHICH IS IN THE INVENTORY OF CATHERINE THE GREAT.
This is Indo-Persian, early seventeenth century. It is of enameled gold, set with rubies, emeralds, and pearls.
Lent by the Soviet Union Government.



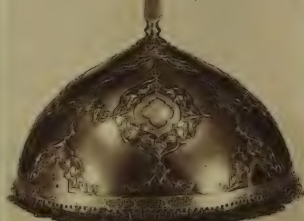
"ASTROLOGICAL" SCISSORS—WITH THE INSCRIPTION "O THOU OPENER OF THE DOORS."
Wrought steel, dimounted with gold decorations and inscriptions in Farsi, "O Thou Opener of the Doors." The scissors are believed to have been used for astrological purposes. Probably of the Shah Abbas period. (1597-1628).—(Lent by V. David, Esq.)



A GRANITE URN BEARING THE NAME OF ARTAXERXES III.
"Urn, every granite, bearing the name of Artaxerxes III. Fifth century B.C. Height, 87 1/2 inches, 23 cm. Now seen for the first time outside the Treasury of St. Mark's, Venice, since it was deposited there centuries ago.—(Lent by Procuratorato di S. Marco, Venice.)



BROCADE BREECHES (PAJAMA) WORN AT THE CORONATION OF JAMES II.
"Brocade breeches (pajama) worn by Sir David Fowler at the coronation of James II, February 6, 1685. The earliest-known example of Persian brocade in English costume of the seventeenth century. 50 by 35 cm.
Lent by R. W. Sandercock, Esq.



A HELMET PRESENTED TO KING GEORGE III.
"Helmet with a spike at the top and a neck-guard attached to it of slightly delicate steel chisel-work. Presented by Path 'Ali Shah to King George III, in 1812."
Lent by H.M. the King.

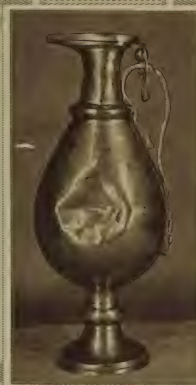
TO BE SEEN ON EXHIBITION IN BURLINGTON HOUSE.



A ROSE-WATER SPRINKLER LENT BY THE SOVIET GOVERNMENT.
This is of gold, set with emeralds, rubies, and pearls, and is Indo-Persian, early seventeenth century. It is in the inventory of Elizabeth and Catherine the Great.
Lent by the Soviet Union Government.



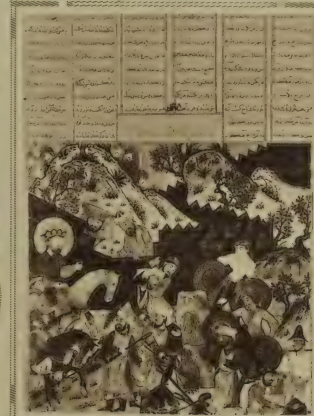
GOLD GOBLET LENT BY THE SOVIET GOVERNMENT.
These come from the Hermitage Museum, which possesses ten or twelve specimens. Their date, like that of the gold ewer, is third-century.—(Lent by the Soviet Union Government.)



A GOLD EWER LENT BY THE SOVIET GOVERNMENT.
This piece, like the accompanying goblets, demonstrates the combined opulence and simplicity which characterized the taste of Sasanian art. Its date is third-century. It comes from the Hermitage Museum.
Lent by the Soviet Union Government.



EDWARD FITZGERALD'S COPY OF OMAR KHAYYAM'S "RUBAIYAT."
The official description of this manuscript is: "Omar Khayyam's Rubaiyat (158 quatrains). Copied by Shaikh Mahmud at Shiraz in 865 A.H./1460 A.D. Gold-inked paper. Illuminated frontispieces. (The original manuscript from which Fitzgerald made his translation.) 15.5 by 9 cm." It is interesting to add that Fitzgerald's rendering—now world-famous and ever-acclaimed—fell flat when it was first published, in 1859.—(Lent by the Bodleian Library, Oxford.)



A MINIATURE SHOWING A WAR-HORSE LED BY A FUNERAL PROCESSION.
"From Firdausi's Shah-nama. Tabriz, early fourteenth century. Funeral of Isfahdar, son of Goktash, King of Persia. The body of the Prince, wrapped in a brocade shroud, lies on a stretcher carried by two mules; his plumed headgear rests on his body; and his war-horse is led in front of the stretcher. 22 by 29 cm.
Lent by Messrs. Janssen, New York and Paris.

A MINIATURE OF GOG AND MAGOG INTEREST.
From a manuscript of the Shah-nama. Alexander building the iron barrier against Gog and Magog. 40 by 29 cm.
Lent by M. H. Viner, Paris.



A PAIR OF BRASS PROCESSIONAL HANDS.
"Joints of fingers connected by rivets. Holes in palms. Decorations engraved on one side. Inscriptions on the other (different in each) in the centre. Floral scrolls; nails cross-hatched with traces of red. Sixteenth-seventeenth century. Such hands (perhaps of Imam Husain) are carried in religious processions. Length 11, width 8.5 cm.; height 11, width 8 cm."
Lent by the Art Institute of Chicago.



THE SIGNATURE AND DATE ON THE MILAN HUNTING CARPET.
"Carpet, knotted in wool and cotton pile. Signed by the maker. Oliva's date. Dated 1021."
Lent by the R. Museo Foddi-Pessoli, Milan.

NATURE AS "CARICATURIST": STRANGE ORGANISMS



"DEVOTIONAL" GESTURES THAT ENTICE OTHER INSECTS TO THEIR DOOM: THE LARVA OF THE PRAYING MANTIS (*EMPUSA EGEA* CHARP.), A GREEDY HYPOCRITE THAT LURES ITS VICTIMS BY PECULIAR ROCKING MOVEMENTS.



AN INSECT RELATIVE OF TAM PEARCE'S GRAY MARE, OR THE PALE HORSE OF THE APOCALYPSE? THE HEAD OF A WEST AFRICAN LOCUST (*ACRIDOXENA HEWANIANA* SMITH)—CONSIDERABLY ENLARGED.



EVIDENTLY VERY PROUD OF HIS CURLING "MOUSTACHE": THE BEARDED SEAL (*PAGORHYNCHUS BARBATUS* FARR), FAR THE LARGEST OF THE ARCTIC SPECIES, PECULIAR FOR A HABIT OF TURNING A COMPLETE SOMERSAULT WHEN DIVING.



A LIVING "BAS-RELIEF" OF THE SEA WITH A LONG STRAIGHT TAIL SUGGESTIVE OF A TIE-PIN: THE UNDER-SIDE OF A THORNBACK SKATE (*RAJA CLAVATA*)—A FISH FOUND OFF EUROPEAN COASTS. (PHOTOGRAPHED AT THE LONDON "ZOO" AQUARIUM.)

GROTESQUES IN ANIMAL LIFE: BY LAND AND SEA.



SELF-PROTECTION BY SMELL: THE CATERPILLAR OF THE PUSS MOTH (*DICERANURA VINULA* L.) IN AN ATTITUDE OF FRIGHT OR DEFENCE, WITH RED FILAMENTS (OF INTENSE ODOUR) EMERGING FROM THE FORKS OF THE TAIL.



A LEAF (ON LEGS) OUT OF NATURE'S BOOK OF CURIOSITIES: A GRASSHOPPER (*HYMENOPUS TRIANGULARIS* WEST.) FROM THE PHILIPPINE ISLANDS, WITH A COMPARATIVELY ENORMOUS HELMET-SHAPED NECK-SHIELD COVERING ITS BODY.



A CATFISH WITH SPICY "WHISKERS" RECALLING THE "CHESHIRE CAT" WITHOUT ITS GRIN: THE AMERICAN BULL-HEAD (*AMIURUS NEBULOSUS*)—ONE OF THE SILURIDE, SAID TO "PURR" WHEN TAKEN OUT OF THE WATER.



A MONSTROUS "NOSE PARKER"—THE OGRE OF AN INDUSTRIOUS INSECT RACE: THE ANT-EATER (A SOUTH AMERICAN TYPE) WITH HUGE FORE-LEGS FOR DIGGING AND LONG SNOUT FROM WHICH DARTS A WORM-LIKE TONGUE TO LICK UP ITS PREY.

IN our issue of January 3 last we reproduced a number of remarkable photographic studies of the grotesque in Nature, as represented by various bizarre forms of animal life, and, as there promised, we now give these further examples, perhaps even more striking and curious. Concerning some of them, a few additional notes may be of interest. Describing the larva of the Praying Mantis, Professor W. Ramme writes: "As yet it has no wings and its abdomen is still curved upwards. This insect is mostly found seated head-downward on plants, but also (especially in the larval stage) it stands on the ground. With its head drawn out into a long 'helmet' and its raised feelers, it then looks extremely grotesque, especially when, with peculiar rocking movements, it entices other insects that form its food."

(Continued opposite.)

(Continued.)

Of the Thornback Skate, "The Royal Natural History" says: "It takes its name from having the whole upper surface studded at intervals with claw-like spines."—"The bearded seal," we are told by the same authority, "is by far the largest of all the northern seals. A distinctive peculiarity of this species is its habit of turning a complete somersault when about to dive, especially when fired at."—"The catfish," says the "Century Dictionary," "is a name generally given in the United States to species of the family Siluridae, which, when taken out of the water, emit a sound like the purring of a cat. . . . *Amiurus* is a large genus of Siluridae, containing many of the commonest American species of catfishes, horned pouts, or bull-heads, such as *Amiurus nebulosus*."



A JAR SEAL STAMPED WITH THE NAME OF JEHOVAH; A TEMPLE OFFERING.

whose destruction is described in the seventh chapter of the Book of Joshua. As Professor Garstang mentions in his article following, the expedition was financed by

THE WALLS OF JERICO EXCAVATED.

NEW ARCHAEOLOGICAL LIGHT UPON JOSHUA'S STORMING OF THE CITY; ITS STRUCTURE; AND DATES OF INNER AND OUTER FORTIFICATIONS.

By PROFESSOR JOHN GARSTANG, MA., D.Sc., F.S.A. Director of the Excavations at Jericho; Professor of Archaeology in the University of Liverpool; formerly Director, Palestine Department of Antiquities. (See Illustrations opposite and on pages 96 and 97.)

Here and on the next three pages we illustrate the splendid results of the excavations conducted by Professor Garstang on that romantic Biblical site, the city of Jericho, whose destruction is described in the seventh chapter of the Book of Joshua. As Professor Garstang mentions in his article following, the expedition was financed by

The German excavations disclosed two systems of defence, an outer stone rampart (marked A A in our plan, Fig. 2) at the foot of the mound which it enclosed, and on top of the mound around its outer edge a double brick wall (C C in the plan), the inner member of which was 12 ft. and the outer 6 ft. thick. The excavators, though in doubt as to the precise dates to be attributed to these fortifications, concluded in the end that the stone rampart was that of the later Israelite occupation; while the inner and upper brick wall they assigned to a much earlier

period, the double brick wall, belonged to a still earlier period. It followed that the city must in that case have been lying derelict in the age of Joshua, which under any scheme of computation falls in the Late Bronze Age. It was clearly desirable to re-investigate the site, in order to determine both the relative and, if possible, the absolute dates of the various lines of defence in a manner finally acceptable to archaeology.

Sir Charles Marston made it possible for this to be done. Some years ago in *The Illustrated London News* I called attention to the potentialities of Palestinian sites, and urged especially that Hazor should be further examined. This appeal met the eye of a mutual friend, a distinguished Oxford scholar, and, as a result of his interest, Sir Charles Marston asked me to excavate Hazor, and subsequently Jericho, and made himself responsible for the whole cost of these investigations. Science owes him a debt of gratitude.

[Continued on page 96.]



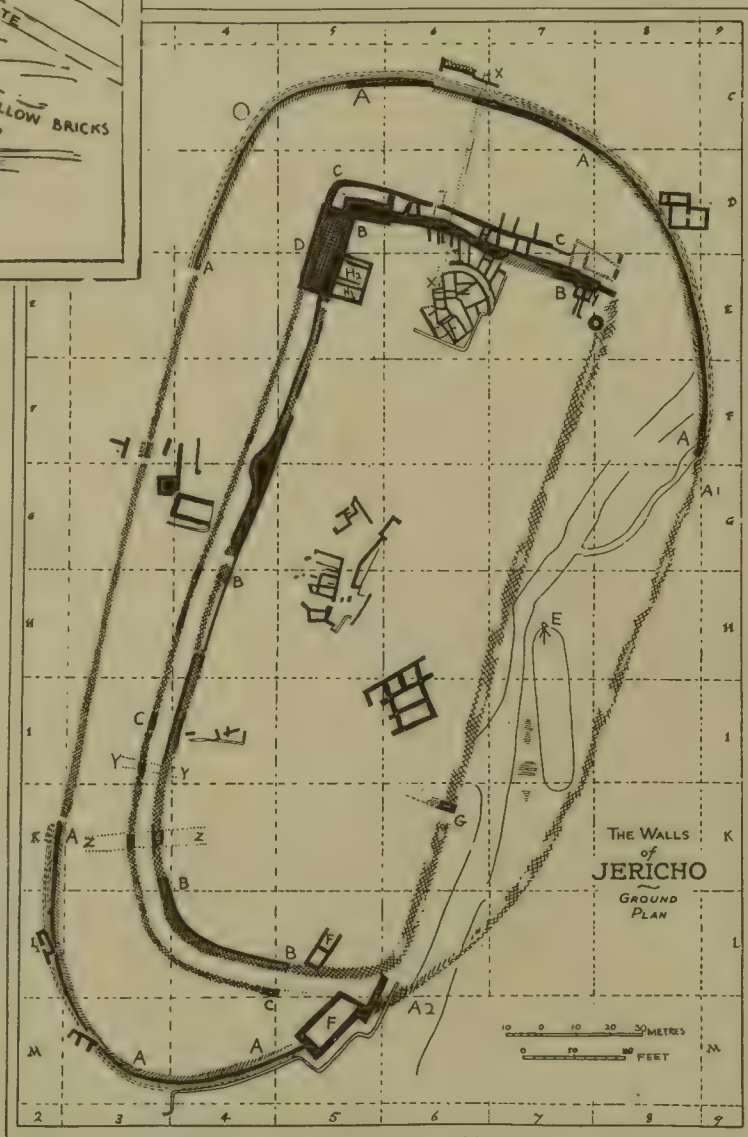
FIG. 1. THE TALE OF JERICO'S DESTRUCTION TOLD IN DIAGRAM FROM A SKETCH MADE ON THE SPOT: AN ARCHAEOLOGICAL SECTION OF THE RUINED BRICK WALLS WHICH DEFENDED THE CITY IN THE AGE OF JOSHUA, AND THE DEBRIS OF THEIR DESTRUCTION.

Sir Charles Marston, to whose munificence all British archaeologists in the Near East are deeply indebted. For the continuance of the very important work at Jericho, however, still further funds are required, and we appeal to all our readers interested in Palestinian archaeology to contribute towards this admirable British enterprise, which is likely to lead to still more notable discoveries than those here described. Professor Garstang arranged to leave Marseilles for Palestine on January 17, to resume his great work on the Jericho site.

period. Later, about 1920, more recent investigation into the archaeology of the country led them to revise their conclusions, and they correctly attributed the outer stone wall to the Middle Bronze Age, about 1800 B.C. But they continued to believe that the inner line

FIG. 2. THE WALLS OF JERICO: A PLAN SHOWING THE OUTER STONE RAMPART (A A) DATING FROM THE MIDDLE BRONZE AGE (C. 1800 B.C.) AND THE DOUBLE LINE OF BRICK WALLS (B B AND C C) ROUND THE EDGE OF THE MOUND, FORMING THE INNER DEFENCES IN JOSHUA'S TIME — THE LATE BRONZE AGE (C. 1600-1200 B.C.)

The letters marked on this plan indicate—A A, an outer stone revetment of the Middle Bronze Age II. (1800-1600 B.C.); A 1—A 2, conjectural line of the same stone rampart enclosing the spring E; B B and C C, a line of defence consisting of a double brick wall in the Late Bronze Age (1600-1200 B.C.); G, gateway; D, tower; X X, Y Y, and Z Z, positions of sections described in the Report; H 1 and H 2, houses built against the tower.



JERICO is a name familiar to all. Those who have read the account of the total annihilation of the city by Joshua cannot fail to be deeply interested in the results of excavation within the ancient ruins. These are found not far from the modern village of El Riha, the Arabic form of Jericho, on a low mound at the foot of the western plateau, just above a copious spring, familiarly known as Elisha's fountain, and more strictly called Ain El Sultan. In ancient times, the position of Jericho had a certain strategic importance. Distant from Jerusalem about twenty-four miles, it lies deep in the Jordan rift, 800 feet under sea-level and 4000 feet below the height of Jerusalem. Upon it there also converged routes from other ancient cities, such as Hebron to the south, and Bethel and Shechem to the north, routes which met there because immediately to the east, about six miles away, were some of the permanent fords of the Jordan. Thence the main high road towards the east climbs the distant hills in the direction of Amman, while other tracks communicated with the lands of Moab and Gilead. Jericho thus dominated the main trade route of antiquity from Jerusalem towards the east. Its weakness lay in its isolation, for, though the numerous tracks linked it with the friendly cities, these were invisible, and too far away to rely upon for help in sudden emergency. Consequently, Jericho was surrounded from a very remote age with defensive walls, and, even so, history and excavation agree that it was frequently destroyed.

Excavations were made some twenty years ago by eminent German scholars on the site of old Jericho, and produced what might well be regarded then as sensational results. The defensive ramparts of the old city came to light, and even the houses of various periods were skilfully dissected. Bible students noted with supreme interest that the discoveries seemed to agree almost entirely with the Biblical description of Jericho. The surrounding walls, houses against or upon the walls, the traces of destruction and of fire, and, lastly, the subsequent Israelite occupation in the second phase of the Early Iron Age, about 970 B.C., seemed all accordant with the Biblical account. Jericho was the earliest of the Canaan cities assailed by Joshua; and, had the facts not seemed to support the narrative, the basis of the history of Israel in Canaan would have been severely shaken.



FIG. 3. THE OUTER STONE RAMPART (ON LEFT) AND THE DOUBLE BRICK WALL (ON RIGHT) IN RELATION TO THE STRATA OF VARIOUS PERIODS: A DIAGRAMMATIC SECTION OF THE MOUND OF JERICO ALONG THE LINE MARKED X X IN FIG. 2.

This diagram illustrates a complete section of the north end of the mound of Jericho (along the line marked X X in the plan shown in Fig. 2) and shows the relations of the two systems of defence to the dated stratifications. The older system—the outer stone rampart, with brick parapet and outer fosse, dating from the Middle Bronze Age (1800-1600 B.C.) is seen on the left; and on the right is the double brick wall of later date (1600-1200 B.C.) on the edge of the mound. Against the brick parapet is a house of the Late Bronze Age II. (1400-1200 B.C.), in the debris of which period was found a vase of Mycenaean pottery. The upper stratum marked I 2 falls to rest upon the occupation-level of L B 1 (see list of abbreviations, top left), indicating a gap in the occupation of the area from 1200 to 900 B.C.

"AND THEY BURNT THE CITY WITH FIRE": JERICO'S DESTRUCTION CONFIRMED.



FIG. 4. DEFENCES OF JERICO BEFORE JOSHUA'S TIME: PART OF THE OLD CANAANITISH STONE RAMPART OF THE MIDDLE BRONZE AGE (1800-1600 B.C.), WITH REMAINS (ON LEFT) OF A STILL EARLIER HOUSE (2000-1800 B.C.).



FIG. 5. AN EMINENT ARCHÆOLOGIST AMONG THE RUINS OF JERICO: DR. CLARENCE FISHER BEHIND THE REMAINS OF A BRICK PARAPET BUILT ON TOP OF THE STONE RAMPART OF THE OLDER CANAANITE CITY.



FIG. 6. JERICO'S WALLS OF JOSHUA'S TIME: THE CROSS-CUT (ZZ IN FIG. 2) SEEN FROM THE EAST, SHOWING (LEFT) THE INNER BRICK WALL AND (RIGHT) THE TILTED OUTER WALL, WITH THE BISHOP OF HEREFORD TOUCHING IT.



FIG. 7. A UNIQUE PHOTOGRAPH SHOWING HOW THE WALL DÉBRIS FELL DOWN THE SLOPE OF THE TELL (MOUND) MINGLED WITH CHARCOAL AND ASHES: A GREAT "POCKET" OF BURNT MATTER IN A CUTTING.



FIG. 8. TWO HOUSES (H1 AND H2 IN FIG. 2, SQUARE E5) BUILT AGAINST THE INNER FACE OF THE INNER BRICK WALL, WHERE IT ABUTS ON THE TOWER: A VIEW SHOWING TRACES OF DESTRUCTION BY FIRE IN THE AGE OF JOSHUA.



FIG. 9. WALLS OF JERICO IN JOSHUA'S TIME—1600-1200 B.C. (THE UPPER PORTION) AND (BELOW) REMAINS OF THE OLDEST DEFENCES—A BRICK WALL OF ABOUT 2000 B.C.: A SECTION AT THE POINT ZZ IN FIG. 2.

Professor Garstang's notes on the above photographs (slightly condensed) read: (Fig. 4) "The old Canaanite revetment of Middle Bronze Age (1800-1600 B.C.), 5 metres high, built in its lower courses of huge roughly-hewn stones. On left are traces of an early house (2000-1800 B.C.), evidently destroyed by the building of the revetment, which surrounds the whole mound (AA in Fig. 2 opposite). (Fig. 5) Section of old Canaanite revetment (near X in Fig. 2), showing remains of a brick parapet on top. Behind this is Dr. Clarence Fisher, the famous excavator of Nappur, Samaria, Beisan, and Megiddo.—(Fig. 6) View of cross-cut (ZZ in Fig. 2) looking from east. Above the boy (seated, left) are remains of inner brick wall of Late Bronze Age (1600-1200 B.C.), and below (right), tilting outwards down

the slope, is the outer brick wall (2 metres thick), to which the standing figure (the Bishop of Hereford) is seen pointing. In the background is Jebel Kuruntel, the highest neighbouring hill.—(Fig. 7) Falling lines of debris of the Late Bronze Age wall, and a great pocket of burnt matter, with charcoal (C4 in Fig. 2).—(Fig. 8) Houses (H1 and H2 in Fig. 2) built against inner face of wall. The burnt layer against the wall pertains to the destruction of the city in the age of Joshua.—(Fig. 9) Section through upper part of mound (at ZZ in Fig. 2), showing the brick walls. The lower one is all that remains of the oldest fortifications, B.C. 2000. The upper one, which rests partly on the foregoing, is the bottom of the city's main defence in the early part of the Late Bronze Age (the age of Joshua)."

PHOTOGRAPHS SUPPLIED BY PROFESSOR JOHN GARSTANG, F.S.A. (SEE HIS ARTICLE ON THE OPPOSITE PAGE AND FURTHER ILLUSTRATIONS ON PAGES 96 AND 97.)

JERICO AND ITS WALLS, WHOSE COLLAPSE HAS NOW BEEN PROVED BY EXCAVATION: THE CITY IN JOSHUA'S TIME.

RECONSTRUCTION DRAWING BY MISS M. RATCLIFFE. PHOTOGRAPHS SUPPLIED BY PROFESSOR JOHN GARSTANG, F.S.A. (SEE HIS ARTICLE ON PAGE 94 AND OTHER ILLUSTRATIONS ON PAGE 95.)

Continued from Article on Page 94

THE work was taken in hand at Jericho in the spring of 1930, with the assistance of the Bishop of Hereford (see Fig. 6 and page 95). Mrs. Garstang, Mr. D. McCown, and Major Key. It was expected that a few weeks would suffice to solve the chief problem—the date of the various systems of defence; but the task proved to be complicated and difficult. This resulted partly from the extent to which the ground had already been excavated, so that the former dump-heaps, now consolidated by rains, overlay the ruins in many places, but chiefly because, as it proved, the city was destroyed several times in antiquity, and on different occasions its ruins had been raked over for rebuilding, and the stratifications obliterated. It was only after a number of deep cuttings had been made descending to Mother Earth through all the layers of the Bronze Age and the flint-using periods—a task during which some 60,000 fragments of pottery were washed, examined, dated, and charted—that the invisible stratifications of the city became evident. Happily, in the later stage of the work, several undisturbed spots were located which enabled the conclusions to be tested and finally substantiated. The outer stone revetment (Figs. 4 and 5, page 95) proved to belong, as our German colleagues had decided, to the Middle Bronze Age, about 1800 B.C. It thus surrounded and protected the city at an age preceding that of Joshua. It was further defended at that time by a deep fosse which apparently surrounded the whole area, and is shown in our section (Fig. 3); while at the top of the revetment were found the remains of a defensive parapet of brick, seen in Fig. 5. The double brick wall upon the brink of the mound proved to belong mainly to the Late Bronze Age, the period of Joshua. The earlier confusion as to its date was explained eventually by the discovery that the inner brick wall rested partly along the line of a much older fortification. Happily, it was possible to distinguish between these two walls, and, when this clue to the dilemma had been ascertained, the remaining stage of the problem was quickly solved. The upper system of defences was examined at intervals all along the western side. Our photographs, such as Fig. 9, tell the tale of its destruction, which is further illustrated in Fig. 1 from a sketch made upon the spot. Details of the investigation are too lengthy for description here, but were

Continued opposite.



JERICO IN THE TIME OF JOSHUA: A RECONSTRUCTION DRAWING, BASED ON THE LATEST ARCHAEOLOGICAL EVIDENCE, OF ITS PROBABLE ASPECT IN LATE AFTERNOON; SHOWING THE BRICK-WALLED CITY ON THE MOUND, ABOUT SIX ACRES IN AREA, AND OUTSIDE, AT THE FOOT OF THE MOUND, RUINS OF THE OLDER CANAANITE CITY (TWELVE ACRES) WITH ITS RAMPART—(IN MIDDLE DISTANCE BEYOND) THE ISRAELITES' CAMP AT GILGAL.

Continued.]

duly set forth in the Quarterly Statement for the Palestine Exploration Fund. In the study of the architecture and ceramics, I had the valued assistance and advice from time to time of colleagues in Palestine, particularly Dr. Clarence Fisher (see Fig. 5), whose experience in excavations at Samaria, Beisan, and Megiddo is second to none, and also the Very Rev. Père Vincent, who has devoted a long residence in the country to a special study of Palestinian archaeology, in which he is *facile princeps*. When the investigation was completed, all concerned were agreed upon the general result. The main defences of Jericho in the Late Bronze Age (c. 1600-1200 B.C.) followed the upper brink of the city mound, and comprised two parallel walls, the outer 6 ft. and the inner 12 ft. thick. Investigations along the west side show continuous signs of destruction and conflagration. The outer wall suffered most; its remains falling down the slope. The inner wall is preserved only where it abuts upon the citadel, or tower, to a height of 18 ft.; elsewhere it is found largely to have fallen, together with remains of buildings upon it, into the space between the walls, which was filled with ruins and debris. Traces of intense fire are plain to see, including reddened masses of brick, cracked stones, charred timbers, and ashes. Houses alongside the wall (Fig. 8) are found burned to the ground, their roofs fallen upon the domestic pottery within. As to the main fact, then, there remains no room to doubt. When Jericho of the age of Joshua was overwhelmed, its walls fell outwards down the steep slope of the mound, making it readily possible for the attackers to enter the city, which was destroyed by fire. There is a suggestion at one point that the outer wall was undermined, but that detail requires further investigation. The prospect of further excavation next season is indeed of supreme interest. An unexcavated area in the south and has been located wherein are ruined houses of the period, and perhaps also the sanctuary, for it lies opposite the main gate. Possibly tablets will be forthcoming which will throw further direct light upon Jericho's history. The fallen walls are also to be investigated, and some definite evidence may be forthcoming as to the manner of their destruction. Lastly, the traces of the city's defences, as reconstructed about 900 B.C., seem to be visible at certain points, which also demand further investigation.



THE MOUND OF JERICO AS IT IS TO-DAY: A GENERAL VIEW FROM THE WEST—(IN FOREGROUND) A BEDOUIN TENT; (RIGHT, HALF-DISTANCE) MODERN JERICO, WITH THE DEAD SEA BEYOND; (BACKGROUND) THE JORDAN AND HILLS OF MOAB.



THE CITADEL OF JERICO AT THE BEGINNING OF THE EXCAVATIONS: A VIEW FROM THE SOUTH-WEST, TAKEN WHEN THE INNER LINE OF FORTIFICATIONS HAD JUST APPEARED, WITH REMAINS OF A MIDDOL TOWER.



THE EXCAVATIONS ON THE MOUND AT JERICO: A NEARER VIEW OF THE SITE; SHOWING (IN THE FOREGROUND) THE BISHOP OF HEREFORD, WHO WAS AMONG THOSE ASSISTING IN THE ARCHAEOLOGICAL WORK.



THE CITADEL OF JERICO FROM THE NORTH-EAST: A VIEW SHOWING THE PERISHED OUTER BRICK WALL AND (BEYOND IT) THE MOUND CONTAINING THE TOWER; (FOREGROUND) PART OF A CUTTING (X X IN FIG. 2 ON PAGE 95).

Professor Garstang's great work of excavation at Jericho, which he is about to resume, has already confirmed the Bible narrative by discovering (as explained in his article on page 94) that the walls of the city did actually fall in Joshua's day. Interesting comments on the Jericho researches were made recently by Sir Charles Marston, who, with the late Lord Melchett, financed the expedition. "There were two walls," said Sir Charles, "the outer one about 6 ft. thick and 30 ft. high, and then an inner wall 12 ft. thick. Professor Garstang and his colleagues proved last year that the outer wall collapsed, fell outward, and dragged down

the inner wall with it. Several theories have been advanced to explain the fall of the walls. Some say they were undermined, but nothing has been found to support this idea. A more extraordinary theory is that, if the ram's-horn trumpets were blown on one particular note, a long blast would set up metallic vibration in the walls and cause them to fall. I think that is very far-fetched. . . . The most feasible suggestion is an earthquake, and that is the one to which archaeologists give most credence. The expedition this year will try to find traces of such a catastrophe."

SEAWEED AS A SOURCE OF VITAMINS.

A SUBJECT OF INTEREST TO THE NEW ADVISORY COMMITTEE ON FOOD VALUES APPOINTED BY THE MINISTRY OF HEALTH.

Abridged from an Article by JOSEPHINE E. TILDEN, Professor of Botany in the University of Minnesota. By courtesy of the "Scientific American."

Topical interest is lent to the subject of the following article by the recent announcement that the Minister of Health, Mr. Arthur Greenwood, had appointed an Advisory Committee to spread among the public a sound knowledge of food values and nutrition. The Committee includes the discoverer of vitamins, Sir F. Gowland Hopkins, Professor of Bio-Chemistry at Cambridge. Their task is to disseminate instruction about diet, in simple terms, among schools, councils, and other institutions. Whether seaweed will be included in their recommendations we cannot say.

THE food of civilised man consists of the same materials as were used by his remote ancestors: the flesh of animals and the edible parts of plants—roots, stems, leaves, and fruits. The resemblance goes no further. The treatment of this food before it reaches the stomach of hungry man baffles description. It is ground, sifted, shredded, mixed, dried, tinned, boiled, baked, stewed, fried, steamed, fermented, pasteurised, sterilised; it is covered with sauces, dressings, and condiments; and it is even coloured and beautified in a variety of ways. The

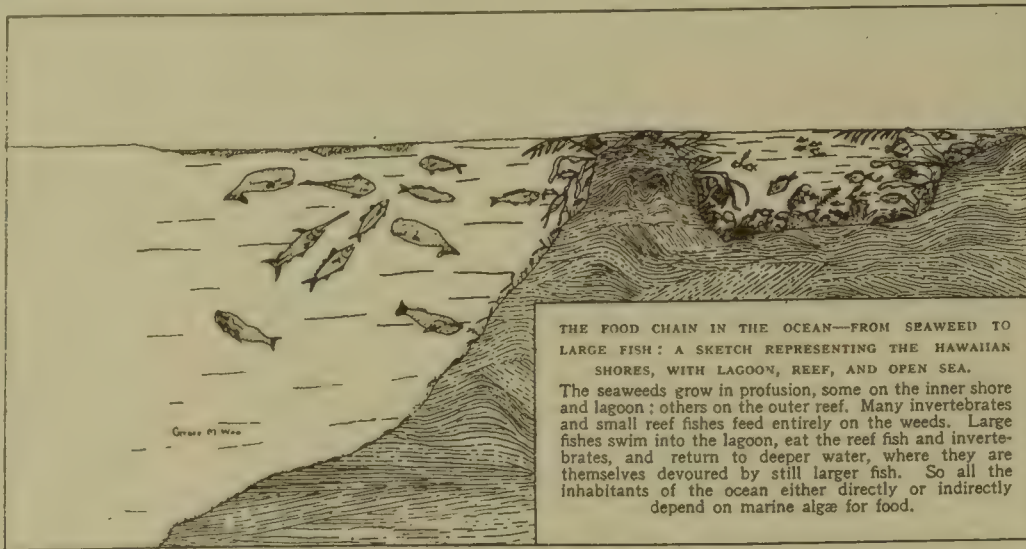
Vitamin A appears to be present only in foods containing fatty material. It occurs in the green parts of land plants and in marine algae, or seaweeds. Indeed, plants are the only organisms capable of manufacturing vitamins, but animals acquire them

deficiency diseases, but all animal sea-food—especially fish, oysters, shrimps, lobsters, and crabs—contains valuable protein and fat, and at the same time it is richer in vitamins than the flesh of land animals and fresh-water fish, and a far better source of iodine. It may be stated with absolute truth that marine food is the best food known at the present time. If it is cooked properly it is found that the food factors it contains are not destroyed—except in the case of vitamin C, which may be obtained from fresh citrons and other fruits, and from green vegetables.

No single food substance known contains such a high amount of iodine as certain marine algae. Tressler and Wells report that dried Atlantic seaweed was found to contain 900,000 parts per billion of iodine. Marine invertebrates and fishes feed upon these plants, or upon other animals which have eaten them, and

thus the flesh of all will contain a certain amount of iodine. The codfish is not herbivorous. It eats certain small crustaceans, which in turn feed upon seaweed. In this roundabout way it obtains the vitamins and iodine that are stored in its liver in such abundance. The liver-oils of all fishes and other marine animals are extremely rich in these special food-factors.

How the various kinds of sea-foods may be secured in great quantity, and how they may be widely distributed to the people needing them, are questions of great magnitude. A long and patient study, on a co-operative plan, of all existing "food-chains" in the ocean is our only hope of conserving the rich materials in Father Neptune's larder. There is a good opportunity here for trained workers in the algae and in marine zoology. The life history of all species of marine algae must be carefully worked out; their structures must be studied and their tissues observed and illustrated, so that, when minute portions are found in the digestive tracts of animals, they may be recognised and tabulated. The Chinese have a proverb which represents popular opinion to-day with regard to life in the sea: "Big fish eat little

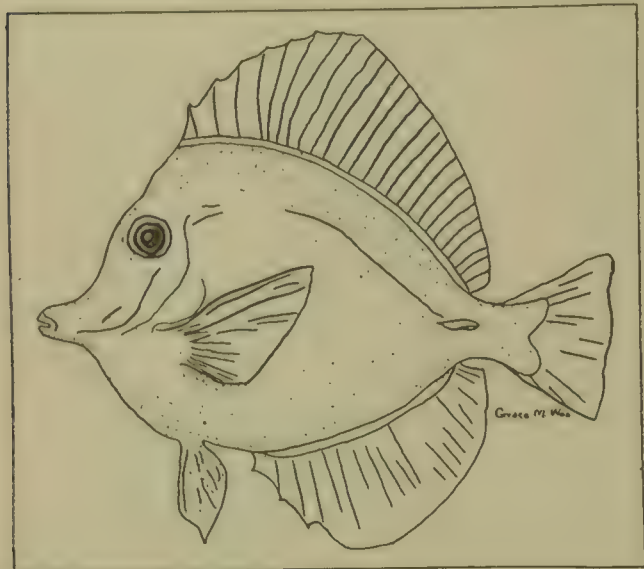


by means of eating the plants. Thus, vitamin A is found in butter, cream, cheese, mutton and beef fat, when the animals producing these foods have been fed upon fresh plants. It is extremely abundant in cod-liver oil. For a very long time it has been known that cod-liver oil is a cure for the disease called "rickets," but no one could explain the reason why until about a dozen years ago, when vitamins were discovered. Vitamin A is essential for the healthy growth of the entire body and for the proper development of the teeth.

Vitamin B is contained in the seeds of plants, as the wheat germ, and in the eggs of animals. Its absence from food is the cause of neuritis and beriberi, diseases characterised by inflammation of the nerves. Vitamin C occurs in richest amount in the orange, grape-fruit, and lemon, but is present in lesser degree in the juices of many fruits and vegetables. Its absence causes scurvy. Vitamin D is abundant in cod-liver oil. It has the property of preventing rickets by causing normal bone growth.

The origin of vitamin A, in fish oils and fish-liver oils, has been traced back by the bio-chemist to the synthetic powers of marine algae. Green plants (those containing chlorophyll), including all marine

algae, are the only organisms that are able to manufacture food. In the presence of sunlight as a source of energy, the seaweed constructs food from inorganic materials, such as carbonic acid and other ultimate foodstuffs, from the sea-water surrounding it. In some unknown way it makes over these simple substances into complex chemical compounds, such as proteins, carbohydrates, fats, and inorganic salts, and powerful chemical energy is concentrated. The plant is a producer. Marine algae, then, are responsible for all the food produced in the ocean. Marine animals, then, necessarily depend upon seaweeds for their existence. Another fact to be noted is that marine algae have the power of absorbing iodine from sea-water. . . . To recapitulate, cod-liver oil contains iodine and vitamins A and D. While it must be placed far ahead of all other available food substances, it must be remembered that all sea-foods are rich in this respect, and should be included in the diet of civilised man. All fat marine fishes contain the necessary food-factors, so that not only is cod-liver oil a wonderfully curative remedy for

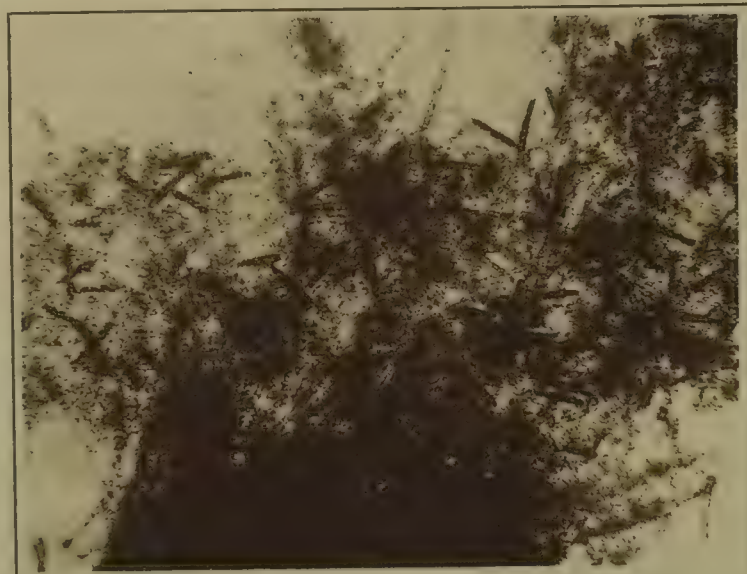


A COMMON HAWAIIAN REEF FISH THAT SEEMS TO LIVE ENTIRELY ON SEAWEEDS: THE LITTLE SURGEON FISH (*ZEBRASOMA FLAVESCENS*), COLOURED A BEAUTIFUL CHROME-YELLOW.

main point of difference is this: the protoplasm has been killed; the vitamins have been destroyed—for the most part by the application of heat. Physicians and biologists know, and the public is beginning to realise, that the important problem at this time is not only to discover means of obtaining more food, but to find out what is the matter with the food we have.

It is now known that eggs, fresh milk, green plants, and animal flesh contain more than proteins, carbohydrates, fats, and inorganic salts—the four great classes of foodstuffs. The bio-chemist has proved beyond a doubt that several kinds of food-factors, now termed "vitamins" are present in egg yolk, milk, and in most fresh plant and animal tissues. He has also proved that such vitamins must be present in the food of civilised people, and in the food of animals under the control of civilised people, or such deficiency diseases as tooth-decay, rickets, neuritis, scurvy, and goitre will continue to inflict human beings.

The bio-chemist cannot as yet explain what vitamins are, for they have not been completely separated; but, from innumerable tests made by investigators in various fields, the occurrence, and finally the origin, of these invisible food-factors have been discovered.



TYPICAL OF THE SEAWEED BASIS OF ALL OCEAN CREATURES' FOOD. THE COMMONEST KIND OF BROWN ALGA (A SPECIES OF *ECTOCARPUS*) BEARING TINY FRUIT, WHICH THE FISH DELIBERATELY PICK OFF.

fish; Little fish eat shrimp; Shrimp eat mud." There is no questioning the truth of the first statement, and the second is approximately correct; but the third involves an entirely new problem and one of vast possibilities. The great need at present is an extended, co-operative scientific investigation of the "mud"—in other words, seaweed food—said to be consumed by the shrimp.

VITAMINS IN "FATHER NEPTUNE'S LARDER": AN IDEA FOR FOOD-VALUE COMMITTEES TO CONSIDER.



COLLECTING SEAWEED SPECIALLY RICH IN IODINE FOR FOOD: JAPANESE KELP FISHERS OF HOKKAIDO, WHO CUT THE KELP FROM THE ROCKS UNDER WATER WITH KNIVES OR HOOKS FIXED TO THE END OF LONG POLES.



A WHOLE JAPANESE FAMILY ENGAGED IN PREPARING DIFFERENT KINDS OF SEAWEED FOR MARKET: AN ELEMENT IN THE NATIONAL DIET CONDUCTIVE TO HEALTH AND GENERAL INTELLIGENCE.



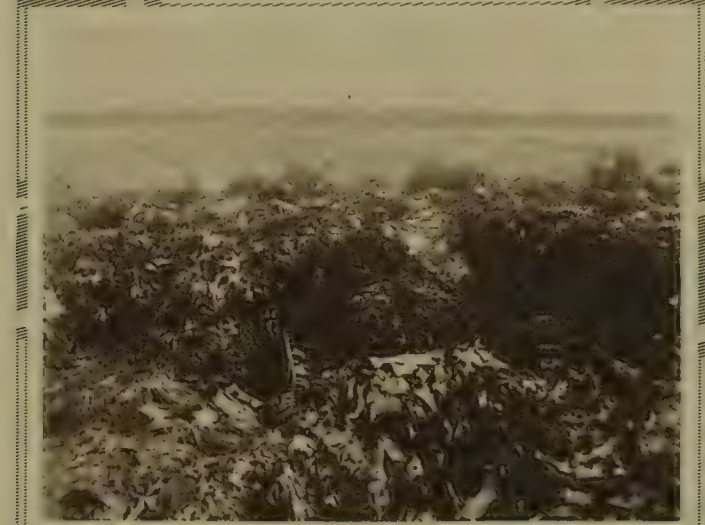
SORTING LAVER—ONE OF MANY EDIBLE SPECIES OF SEAWEED WIDELY POPULAR IN JAPAN.



TYPICAL EXAMPLES OF JAPANESE FOOD PREPARED FROM SEAWEED: SEVERAL BUNDLES OF MARINE ALGÆ PURCHASED AT SHOPS IN JAPAN BY THE AUTHOR OF THE ARTICLE PRINTED ON THE OPPOSITE PAGE.



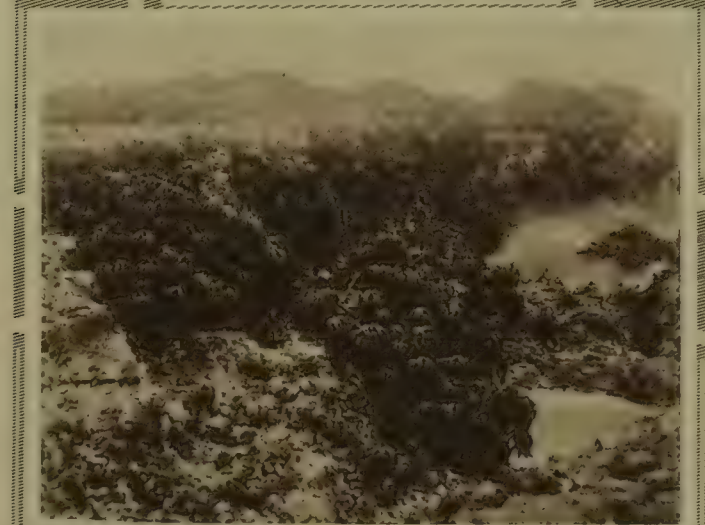
MAKING LAVER: SEAWEED CUT AND DRIED BEING PREPARED IN SHEETS FOR THE MARKET.



A POTENTIAL SOURCE OF FOOD: HEAVY GROWTHS OF MARINE ALGÆ ON THE SHORE AT "MINNESOTA SEASIDE STATION," PORT RENFREW, VANCOUVER ISLAND.



PART OF "THE RICH MATERIALS IN FATHER NEPTUNE'S LARDER": A REEF WITH A FRINGE OF BROWN SEAWEEDS (*POSTELSIA*), AT LOW TIDE, ON THE SOUTHERN SHORE OF VANCOUVER ISLAND, AT THE "MINNESOTA SEASIDE STATION."



AT THE "MINNESOTA SEASIDE STATION" ON THE SOUTH SHORE OF VANCOUVER ISLAND: ROCKS AND TIDE POOLS AT LOW TIDE, COVERED WITH A THICK GROWTH OF SEAWEED.

"MARINE ALGÆ," writes Professor Josephine E. Tilden (author of the article given opposite), "have the power of absorbing iodine from the sea-water. They store it in considerable amount in their tissues. The large, coarse, brown 'kelps,' in particular, are very rich in this element. . . . Marine animals obtain all of their food, and, with it, all of their necessary supplies of vitamins and iodine, from marine algæ or seaweeds. This explains why animal sea-food is so much richer in vitamins and iodine than the flesh of land animals. The latter depend ultimately for food upon land plants which, in turn, are not always able to secure the proper kinds of raw materials for their food in the soil in which they grow. As an example, the soils of the so-called 'goitrous regions' are lacking in iodine. . . . Since marine algæ are even richer in food-factors than are marine animals; they too should be added to our food. Powdered seaweeds, when mixed in small amounts with other food, cannot be tasted. In larger amounts they impart a pleasing taste, and are much relished by persons accustomed to their use. Since time immemorial marine algæ have formed a very important part of the food of the Japanese people. At the present time perhaps six or seven different kinds of seaweeds may be used at a single meal. Goitre is unknown in Japan. Without doubt the hitherto almost national diet in Japan, consisting of rice, fish, and seaweed, has had much to do with the good health, the high degree of general intelligence, and the unusual artistic, literary, and scientific attainments of this race. Among the Chinese people the same thing is true. In the 'extraordinary physical capacity and endurance of her people there is the physical basis of their success throughout the ages.'"

ILLUSTRATIONS BY COURTESY OF THE "SCIENTIFIC AMERICAN." DRAWINGS FROM THE BULLETIN OF THE BUREAU OF FISHERIES (U.S.A.).

A SCHOOL IN A MOSQUE—WITH "CELLS" IN THE WALL



AT A "HIGH SCHOOL" IN AN OASIS: STUDENTS ATTENDING A LECTURE IN THE COURT OF THE ANCIENT MOSQUE AT SIDI OKBA, WHERE THE CHIEF SUBJECTS ARE SACRED TEXTS AND ANCIENT HISTORY.



STUDENTS PREPARING FOR AN EXAMINATION AT SIDI OKBA: STUDYING THEIR KORAN ON THE ROOF OF THE MOSQUE WHICH IS THEIR SCHOOL, AN INSTITUTION WHICH SUPPLIES THEM WITH LEARNING, BOARD AND LODGING.

ABOUT twelve miles south-west of Biskra, in Algeria, is Sidi Okba, a place of one-storeyed houses made of sun-dried bricks, but none the less interesting and, in its way, important; for it boasts one of the best known Koran "High Schools" in North-West Africa, as well as the tomb of the Mohammedan hero whose name it still bears. Sidi Okba was the leader and the Alexander of the Arabs who conquered Africa for Islam, from Egypt to Tangier, in the first

(Continued in Box 1.)



YOUNG MEN IN THEIR "ACADEMIC DRESS" AT SIDI OKBA "HIGH SCHOOL"; VEILED STUDENTS FROM A TUAAREG TRIBE.



HEAD OF A SCHOOL WHICH BEARS THE NAME OF A GREAT MOHAMMEDAN WARRIOR MISSIONARY: THE RECTOR OF SIDI OKBA "HIGH SCHOOL" IN A STUDIOUS MOOD.

century of the Hegira. He was killed by the Berbers near this place in A.D. 682. The Koran "High School" at Sidi Okba is situated in the ancient mosque which houses the imposing tomb of the dead hero: the school and the students' quarters, including the kitchen, are under the same roof. The sleeping-apartments are reminiscent of nothing so much as a hen-roost! To reach any of the "cells" of which they are composed, the student has to

(Continued in Box 3.)

FOR STUDENTS: LEARNING AND LODGINGS AT SIDI OKBA.



ABOUT TO ENTER HIS OWN PARTICULAR NARROW, WINDOWLESS "CELL" IN THE WALL BY MEANS OF RUDE STEPS: A STUDENT AT THE "DOOR" OF ONE OF THE FURNITURE-LESS SLEEPING-APARTMENTS AT SIDI OKBA.

climb up a ladder akin to that placed at the door of chicken-houses, and, when inside, he lies down to rest on the bare floor—for no better arrangement is made for him. The Mohammedan student brings little else with him than what he can carry in his hand on the caravan journey; and he has no spare clothing. (The true son of the desert dislikes sleeping in a bed—so much so that, if he is ever compelled to spend the night in an hotel, he often prefers to lie on the floor beside the bed, rather than to get into it.) Usually lectures at the "High School" take place on the roof of the mosque; but if the sun is too hot, or a curious party of tourists intrudes, students and lecturers withdraw to the shady courtyard. The subjects of the lectures are mostly the interpretations of the Holy Scriptures and their ancient history: in a very real sense, knowledge of the Koran is the Alpha and Omega of the education given at Sidi Okba.



VEILED MOHAMMEDAN WOMEN OF SIDI OKBA: A RARE SIGHT IN THE STUDENTS' TOWN.

A SECRET OF THE ARCTIC AT LAST REVEALED.

BEING AN APPRECIATION OF

"THE ANDRÉE DIARIES." Translated from the Official Swedish Edition by Edward Adams-Ray.*

(PUBLISHED BY JOHN LANE THE BODLEY HEAD, LTD.)

THE finding of the Andrée Diaries is an incident without parallel in the history of literature. Andrée left Dane's Island, Spitzbergen, on July 11, 1897; on Aug. 6, 1930, the skipper of the *Bralvaag*, bound on a combined scientific and sealing expedition to Franz Joseph Land, discovered on the shore of White Island those relics which are now world-famous. Nothing had been heard of the

than to begin the preparation of the wet leaves, thin as silk, and to watch how the writing or drawing, at first invisible, gradually became discernible as the material dried, giving me a whole connected description, written by the dead—a description which displayed unexpected and amazing details, and which allowed me to follow the journey of the balloon across the ice during the three short days from the 11th to the 14th July, 1897—which showed me the capricious and cruel sport of the drifting ice and the endeavours made by the three men to reach land, during the months that followed, until the 17th September, when White Island was discovered, and on till the 2nd October, when the ice-floe broke beneath the snow-hut."

Most of the chapters of the book are contributed by different hands; Mr. J. Hertzberg tells us the means he employed to bring into being those photographs some of which are already familiar to readers of *The Illustrated London News*. The task must have seemed hopeless, "for, according to the information given me, the metal cylinders in which the films were lying when found were partly filled with water, and, when the cylinders were opened, all the films proved to be soaked with water, and, to judge by all appearances, had been in that condition for many years. . . . Fortunately, when Mr. Köhler took charge of the films at Tromsø, he emptied off the water which had not been absorbed by the emulsion layer and the black wrapper paper; had this precaution not been taken, the destruc-

tive action of the water, on the cylinders being brought to a milder climate, would certainly have still more dissolved and destroyed the emulsion layer." Mr. Hertzberg was not disheartened. For us the most important thing is that he succeeded in developing large quantities of the photographs, but amateurs of photography will be interested to hear of the technical means by which the feat was accomplished; "incomparably the best results" being obtained "by means of a sulphite-free pyrocatechin-caustic soda developer."

The earlier sections of the book contain character sketches of the three explorers, Andrée, Strindberg, and Fraenkel. "Andrée, with his sober intellectualism, his bent to systematisation, with his unbounded belief in the powerful development of applied natural science, was in a high degree a child

of his time—the 'eighties of last century—with its practical ideas and its fierce zeal for reform." He was unmarried; and his reasons for remaining single seem ironical enough when considered in relation to the tragic miscarriage of his projects: "In wedded life one has to deal with a number of factors which do not allow themselves to be arranged in accordance with some certain plan." "Be careful of health," was one of his maxims, "but not of life."

Strindberg was a brilliant student, an accomplished performer on the violin, and in his early twenties was appointed Assistant in Physics at the University of Stockholm. At the age of sixteen he began to take a great interest in photography; and just before the expedition started he had won first prize with his photographs at the Industrial Palace in Stockholm.

Fraenkel's scholastic career was less distinguished. He was "no bookworm, and the subject in which he . . . most distinguished himself at school was gymnastics." The practical, not the theoretical, side of his profession (engineering) appealed to him; his nature was bold and adventurous, and the experimental

balloon ascents made by Andrée in the *Svea* fired his fancy. He had himself made ascents in Paris before he applied to join Andrée's party.

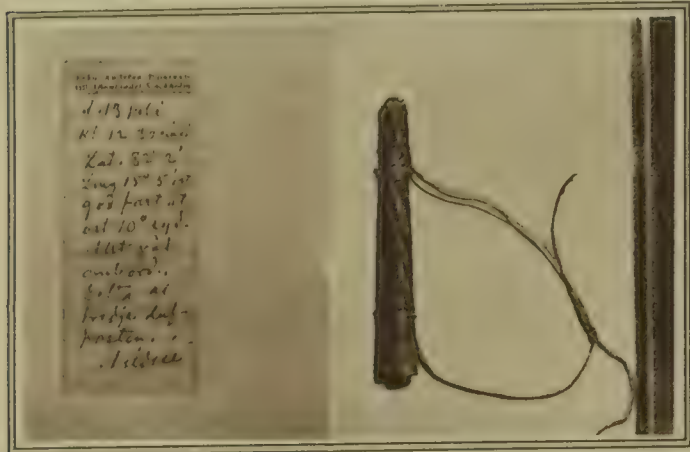
The object of the expedition was to reach the North Pole. "How soon the Pole can be reached" (wrote Andrée) "depends, of course, on the velocity and direction of the wind. Under favourable conditions it can be done in a very short time." Ten hours was his most optimistic estimate; with a speed of 16.2 miles an hour, he calculated he could reach the Pole from Spitzbergen in 43 hours and reach Bering's Straits (a distance of 2200 miles) in six days, "one-fifth of the time during which the balloon can remain in the air."

Alas! his predictions were falsified. The *Eagle* remained in the air for three days—

from the 11th to the 14th of July; and during the last hours it flew so low that the "gondola" constantly bumped against the ice. Andrée had the notion of steering the balloon by means of guide-ropes trailing on the ice; but these were speedily lost, with what effect on the course taken by the airship cannot be estimated. But "it may be considered as certain that the reason why the *Eagle* was unable to remain floating any longer was its being covered by ice in the damp and cold Polar air."

When the balloon came down the explorers had to decide immediately "whether they should remain in the place where they were and drift with the ice or begin a wandering across it." Strangely enough, the only commentary made by Andrée on this all-important decision is the laconic: "Determined to start from the place where we were." Of the direction they were to take he says nothing; but, from an entry in Strindberg's shorthand notes, it is proved that their destination was Cape Flora in Franz Joseph Land, 200 miles to the south-west. They had a depot there, and they knew that the climate would enable them to support "the cold and darkness of the Polar winter." But it was a disastrous decision; they had reckoned without the drift which

(Continued on page 116.)



ANDRÉE'S PIGEON-POST: THE MESSAGE (SENT ON THE THIRD DAY OF THE BALLOON VOYAGE IN 1897, AND EVENTUALLY RECEIVED IN STOCKHOLM); WITH THE CYLINDER THAT CONTAINED IT.

The message reads: "From Andrée's Polar Expedition to *Aftonbladet*, Stockholm, 13 July, 12.30 midday, Lat. 82° 2' Long. 15° 5' E. Good speed to E. 10° south. All well on board. This is the third pigeon-post. Andrée." This letter was inside the cylinder, which was made of parchment soaked in paraffin, and bore outside the following message: "Open the cylinder from the side and take out two letters; the one in ordinary hand is to be wired to *Aftonbladet*; the one in shorthand is to be sent by the first post to the paper." The shorthand despatch was missing. Strindberg had been too busy to write it. The balloonists had thirty-six carrier-pigeons presented by *Aftonbladet*, a Stockholm evening paper.

explorers since the carrier-pigeon they released from the balloon in latitude 82° brought the message, "All well on board."

The actual discovery was made by two sealers who had gone "up the strand to look for drinking water. . . . They came to a stream across which they waded, and then, on the other side, they found an aluminium lid which they picked up with astonishment. They began to look around and noticed a dark object sticking up out of a snowdrift a little farther inland. They went there at once, and found a canvas boat half-buried in the snow. . . . When Eliassen (the captain) heard of the find, he went to the place at once. There lay the boat with a full cargo of Expedition equipment, many of the objects being marked 'Andrée's pol. exp. 1896.' About 33 ft. north of the boat he found a human body which lay leaning back against the slightly sloping wall of rock. Close by the boat there was a sledge frozen deep in the ice."

The *Bralvaag* made only a brief stay in the inhospitable neighbourhood of White Island; and though Gunnar Horn, the leader of the expedition, and Captain Eliassen took on board a large number of the relics, they did not take all. Among their finds, the most important were Andrée's body, and Strindberg's, which had been buried under a heap of stones, and Andrée's First and Second Diaries, which were discovered among his clothes. From these discoveries it was naturally inferred that only two members of Andrée's party had succeeded in reaching White Island.

But a second expedition, starting a month later on board the *Isbjörn*, found the body of the third man, Fraenkel. "The dead man was frozen fast in the ground, and I gained the impression that he had been left undisturbed imbedded in the ice, deep below the surface, ever since death had touched him." This was their most important discovery; but they found besides a sledge, "a large bundle of balloon cloth, containing clothing; two pairs of snow shoes, a sextant, a chest of medicine, a canvas bag with geological samples in copper boxes," and many other things; but surpassing them in value were Fraenkel's almanac and three memorandum books, Strindberg's log-book, and the "tin boxes with films."

On the return journey—the weather was too bad to enable the *Isbjörn* to stay long at White Island—Knut Stubbendorf made a first tentative examination of the precious documents.

"When the mass of frozen paper had thawed, evaporation began, of course, and on studying the progress of this phase, I discovered that, at a certain stage, the leaves of the paper were both firm and soft enough to remain entire, and to be drawn apart. I pushed a knife cautiously between the edges, which were partially destroyed and stuck together, until the leaves could be separated fairly easily—easily, at least, in comparison with the difficulty I had imagined. . . . I have seldom, if ever, experienced a more dramatic, a more touching succession of events



THE LAST SIGHT OF ANDRÉE AND HIS TWO COMRADES UNTIL THEIR BODIES WERE FOUND THIRTY-THREE YEARS LATER: THE BALLOON ABOUT TO START, ON JULY 11, 1897.

"The time had come to say 'goodbye.' Then Andrée cries: 'Strindberg and Fraenkel, are you ready to get into the car?' Yes, they were, and so they got in. . . . Strindberg, with some emotion, asked (Machuron) to give his love to his fiancée. . . . There they stand, all three of them, on the top of the car. . . . 'Cut away everywhere!' cries Andrée. . . . The balloon rises amid the hurrahs of those below. The three men answer with a 'Hurrah for old Sweden!'"

All Illustrations on this Page reproduced from "The Andrée Diaries." Authorised Translation. By Courtesy of the Publishers, Messrs. John Lane The Bodley Head, Ltd.

* "The Andrée Diaries." Being the Diaries, Records, and Memoranda of S. A. Andrée, Nils Strindberg, and Knut Fraenkel. Authorised translation from the official Swedish edition by Edward Adams-Ray. (John Lane The Bodley Head, Ltd.; 21s.)

ANDRÉE DIARIES AND OTHER RELICS: PHOTOGRAPHS OF THE EXPEDITION, INCLUDING THREE TAKEN IN 1897 AND NOW DEVELOPED.



1. ONE OF THE ANDRÉE EXPEDITION'S OWN PHOTOGRAPHS DEVELOPED AFTER HAVING LAIN PERDU IN ARCTIC ICE FOR THIRTY-THREE YEARS: "ANDRÉE AND A SHOT BEAR," PROBABLY TAKEN ON JULY 19, 1897.



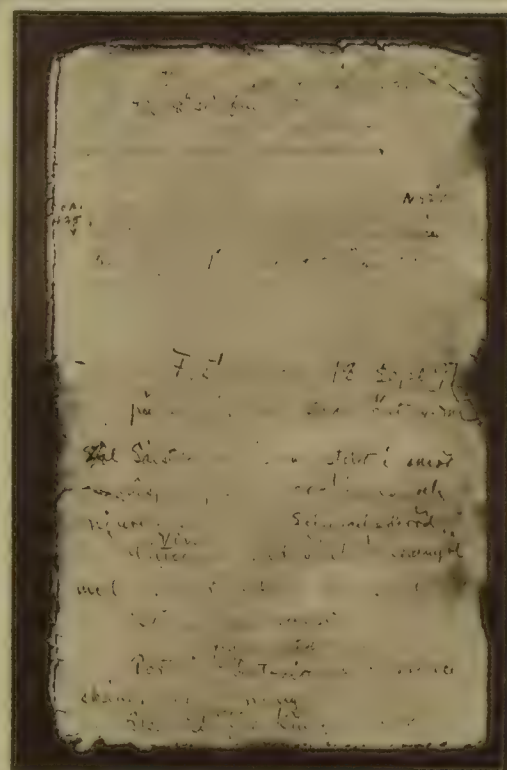
2. ANOTHER OF THE PHOTOGRAPHS TAKEN BY THE EXPEDITION AND DEVELOPED IN STOCKHOLM IN 1930: "ANDRÉE STANDING ON THE CAR OF THE FALLEN BALLOON AND EXAMINING THE HORIZON, JULY 19, 1897."



3. STRINDBERG'S PLAN OF THE SNOW-HUT ON THE ICE-FLOE: THE DESIGN FOR AN IMPROVED "IGLOO" CHRISTENED "THE HOME."



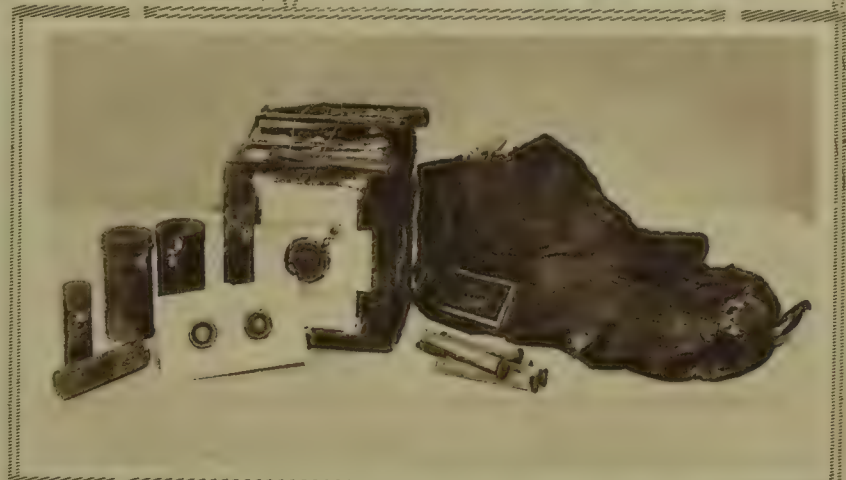
4. THE MOST IMPORTANT DOCUMENT AMONG THE RELICS: "ANDRÉE'S LARGE DIARY AND A SMALLER NOTEBOOK, FOUND BY ANDRÉE'S BODY, WRAPPED IN SENEGRASS AND HIS WOOLLEN JERSEY."



5. A PAGE FROM ANDRÉE'S DIARY, HEADED "WHITE ISLAND": THE MENU OF A "BANQUET" ON THE ARCTIC ICE ON SEPT. 18, 1897.



6. "WE PHOTOGRAPHED THE STORY OF THE DEVELOPMENT OF OUR FORKS. I MADE A FORK (SEEN ON RIGHT). FOR FRAENKEL": THE PHOTOGRAPH SO DESCRIBED IN ANDRÉE'S DIARY ON AUGUST 3, 1897, AND DEVELOPED IN 1930.



7. PHOTOGRAPHIC APPARATUS WHOSE RESULTS SURVIVED THIRTY-THREE YEARS ON WHITE ISLAND: ONE OF THE ANDRÉE EXPEDITION'S CAMERAS, WITH STEREOSCOPIC LENSES, CHANGING BAG, AND FILM STORAGE TINS.

The full story of the most dramatic episode in the history of Arctic adventure—the discovery of the bodies of Andrée and his companions after thirty-three years—has now been told in the official record reviewed on the opposite page. From this volume we are now able to give these deeply interesting illustrations, in addition to those already published, from other sources, in our issues of August 30, September 13, and November 29 of last year, including (in the last-mentioned number) some of the actual photographs taken by the lost explorers themselves and recently developed, in Stockholm, after they had lain for all those years at

the camp of death amid the ice and snow of the frozen North. Further examples of this wonderful feat of photographic technique appear in Nos. 1, 2, and 6 on this page. Andrée and his two comrades, Strindberg and Fraenkel, it may be recalled, ascended in their balloon, the "Eagle," from Dane's Island, Spitzbergen, on July 11, 1897, hoping to reach the North Pole—the pioneer attempt in Polar exploration by air. Their fate remained a mystery until their remains were found on White Island on August 6, 1930. Besides developing the photographs, Swedish scientists have deciphered much of the diaries and other records.

THE ERUPTION OF MERAPI: A FIERY SEA OF LAVA.



A SEA OF FIRE FROM THE CRATER OF MERAPI, IN THE ISLAND OF JAVA: PART OF THE DEVASTATING TIDE OF LAVA, TWO HUNDRED YARDS WIDE AND EIGHTY FEET DEEP, FLOWING DOWN THE SLOPES OF THE VOLCANO, FOR A DISTANCE OF FIVE MILES.



ANOTHER VIEW OF THE SEA OF LAVA AND ASHES FROM THE VOLCANO ROLLING DOWN A RAVINE AT BLONGKEAG FORMED BY THE ERUPTION: A PHASE OF THE RECENT DISASTER IN WHICH 1300 PEOPLE PERISHED AND SOME 30,000 OTHERS WERE RENDERED HOMELESS AND DESTITUTE.

We give here some of the first photographs to reach London (by air mail) illustrating the actual eruption of Merapi, one of the numerous volcanoes of Java, which began on December 18. Some remarkable air views of this and other Javanese craters appeared in our issue of January 3, with particulars of the recent disaster as then recorded at the time of writing. Later accounts stated that the situation around the volcano was improving, and that the eruptions were diminishing in number and violence. All the neighbouring farms and houses were abandoned, and 30,000 refugees had to be cared for by the authorities, while the total loss of life was estimated at 1300. Aeroplanes were

used for rescue work, and a party of seventy natives who had been cut off by two streams of lava were saved after a heavy fall of rain. Reuter reported that "measures have been taken to lodge and feed the enormous numbers of fugitives and for the burial of the victims. The great problem for the future, however, which has not so far been solved, is to find some means whereby the thousands of families who have lost their all can make a living, as suitable land is lacking in the Merapi district." On January 12 news came of a fresh eruption, in the same direction as before, causing anxiety for a village whose inhabitants, at the bidding of a "holy man," refused to quit their homes.

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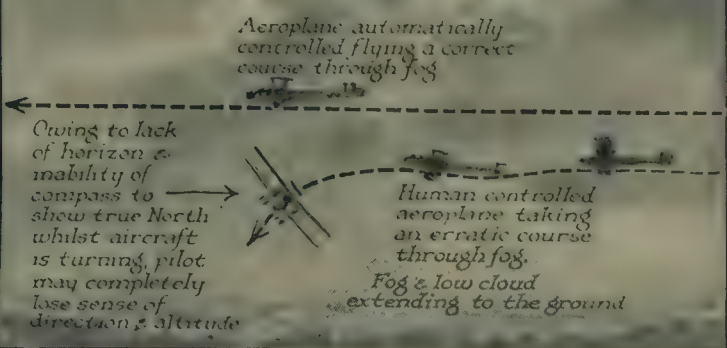
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AGAIN—SUCH CARS AS EVEN HUMBER NEVER BUILT BEFORE.

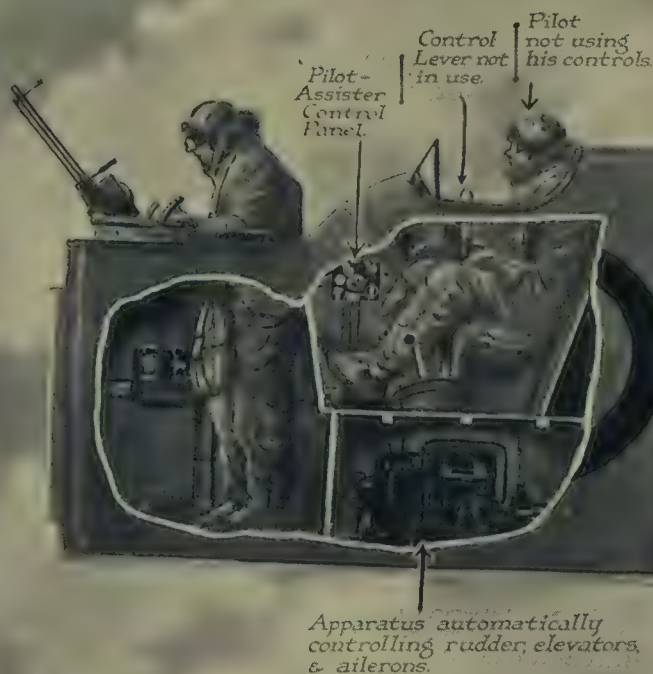
"ROBOT" AIR PILOTS: NEW MECHANICAL AIDS FOR FOG AND NIGHT FLYING.

DRAWN BY OUR SPECIAL ARTIST, G. H. DAVIS, FROM INFORMATION KINDLY SUPPLIED BY THE AIR MINISTRY.

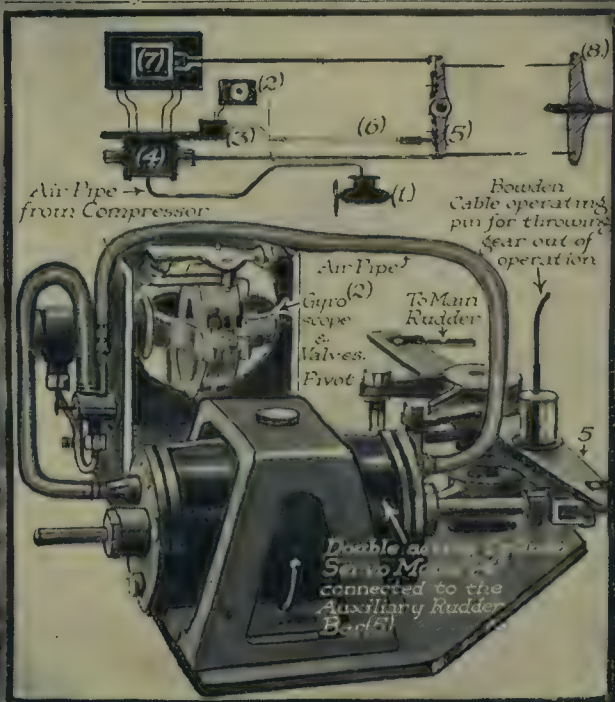
How the Pilot-Assister is of great use in Aircraft Navigation through Fog.



The Pilot-Assister fitted to a Night Bombing Plane.



Details of the Automatic Rudder Control Gear.



Air Compressor

NEW AUTOMATIC CONTROL OF AIRCRAFT IN FLIGHT: THE "PILOT-ASSISTER," USED AT THE R.A.F. AIR EXERCISES.

Many ideas have been tested from time to time for the automatic control of aircraft in flight, but the latest type of pilot-assister now in use in the R.A.F. night-bombers is far ahead of anything previously employed, owing to the rapidity with which any movement of an aeroplane is registered and corrected. The device is naturally complicated, and certain of its parts for aileron control are still of a confidential nature. We illustrate the apparatus fitted to a night-bombing plane, and in the lower inset panel are details of the device for rudder control. A wind-driven air-compressor (1) supplies air under a pressure of 30 lb. to the square inch to work the gyroscope and pistons (2). The gyroscope axle maintains a constant direction in space, but any deviation of the aircraft from its course

entails relative movement between the azimuth ring and the aeroplane. The disturbance of an attached valve (3) admits compressed air to one cylinder of a servo-motor (4) and exhausts the other cylinder, thus causing this servo-motor to control the rudder movements each way, via an auxiliary rudder-bar (5) and a piston (7). There are other devices controlled by a steel cable (6) for shutting off air when enough movement is attained on the rudder (8). The system has proved its worth in long-distance flights, and in flying through heavy clouds and fog when the human pilot is liable to errors. Fitted to night-bombers, it has been thoroughly tested under war conditions during Air Exercises. When all the patents have been duly registered, the device will be available for commercial aircraft.

The World of the Kinema.

By MICHAEL ORME.

CLAUDETTE COLBERT.

A DAY or two ago I read in the film news of a daily paper the reported plaint of an English producer, who sadly bewailed the dearth of feminine beauty and talent in our country. After exhaustive



"CAPE FORLORN"—A GRIM FILM-DRAMA WHOSE SETTING IS A LONELY LIGHTHOUSE: PARSONS (DONALD CALTHROP) GIVES HIS OPINIONS ON LIVING IN A LIGHTHOUSE TO EILEEN KELL (FAY COMPTON), THE WIFE OF THE LIGHTHOUSE SUPERINTENDENT.

"Cape Forlorn" is a powerful drama in which the producers have contrived to make Nature, with her storms and surging waves, provide the Chorus to the elemental in man. It concerns the reactions of a young woman who has married the superintendent in order to escape from Honolulu to "something cleaner" to three men immured in the loneliness of a South Seas lighthouse. These three are "Captain" Kell, the elderly superintendent of the lighthouse (played by Frank Harvey, the author of the piece); Cass, his brutal mate (Edmund Willard); and Gordon Kingsley, a fugitive thief, who is washed ashore (Ian Hunter). Donald Calthrop takes the part of Parsons, the odd man on the light. The drama has been brought to the screen by E. A. Dupont.

tests, he seems to have resigned himself to the bitter fact that there are no beautiful girls in England, though he softens this harsh statement by saying that the real trouble lies in the lack of temperament amongst our screen aspirants, who cannot cry when he wants them to without the aid of glycerine and tear-inducing tricks! Nor does he permit us to seek any solace in the photographic flattery of American studios. Photography has nothing to do with the case, he tells us—*vide* his interlocutor. Here I venture to join issue with him, though as to his barren search for beauty and the tearfulness of his victims I cannot challenge him, being no film-producer myself. But, in my opinion, our actresses are still far from being diligently studied as to their potential charms, and gently nursed to greater beauty by their dress-designers, by the lighting and by the camera-work, as is obviously the case in Hollywood. Nor am I so sure that the temperament amongst our young artists, flashing out so surprisingly as it does on the stage, could not be brought to the surface in the studio, if only they could be induced to forget the camera. Camera-consciousness seems to engender a stiltedness, an artificiality, a thinness, if I may put it so, which is apparent in a loss of definite personality.

Lack of experience may have much to do with it, and greater opportunity for useful apprenticeship may account for the all-conquering radiance of new "stars" that sparkle suddenly and frequently in the American film firmament. We become aware of them, twinkling very charmingly in a secondary rôle, perhaps, and then, hey presto! they surge to the front, fully equipped, their poise a thing to marvel at, their beauty without blemish, and, above all, possessed of very definite personality.

Such a one is Claudette Colbert, who partnered Maurice Chevalier in "The Big Pond," and contributed to that chewing-gum romance a delightful portrait of a spoiled society girl, repeated, on a much

larger canvas, in "Manslaughter." Claudette Colbert, apart from her long-limbed grace and her dark beauty, brings to the portrayal of her parts a warm note that suggests a hidden power, latent qualities not immediately disclosed. To some, her slight vocal mannerism, and something sombre in her gaze, seem to convey nothing more than sulkiness, but she proved convincingly her ability to break away from that mood in her subtle indication of the change brought about in the reckless heroine of "Manslaughter," when her money failed to save her from a prison cell. The wealthy girl, queen of her smart set, accustomed to having her slightest wish obeyed, was gradually bludgeoned into helpless, bewildered youth, and bereft of all her *aplomb*. Claudette Colbert seemed to grow smaller, frailer, infinitely more pitiful as she felt her way uncertainly through an unknown world. Yet the great simplicity, or seeming simplicity, with which she handled this and the later phase of her home-coming was far more moving than any conscious "sob-stuff." In "The Young Man of Manhattan," Miss Colbert played an entirely different part—that of a devoted wife gifted with a sympathy greater than her capacity for self-expression in words. Again she managed to get within the skin of her part, and moulded the character into a



A TENSE SCENE IN THE LIGHTHOUSE IN "CAPE FORLORN": CASS, THE BRUTAL MATE (EDMUND WILLARD), REVEALS THE FACT THAT EILEEN'S LOVER, KINGSLEY, IS AN ESCAPED THIEF.

From left to right are Cass, Eileen Kell, Gordon Kingsley.

vital human being. Poise without self-consciousness, a sure response to the pictorial demands of her medium—which, however, is hidden by the naturalness and ease of all she does—an ability to suggest reserves of strength behind the perfect polish of the surface—these are the qualities that every screen-actress, *comédienne* or *tragédienne*, must possess. To them, Claudette Colbert adds a glowing quality, a quality which may or may not be "temperamental," but which gives to her work roundness and a depth still rare amongst our younger film-actresses.

"CAPE FORLORN."

Mr. Frank Harvey's gripping drama of loneliness and passion in a sea-girt lighthouse has been brought to the screen by Mr. E. A. Dupont with an added power, thanks to the vision and the amazing capacity for creating suspense possessed by the producer. Faults it has—faults mainly arising from Mr. Dupont's deliberate method. He is tempted to linger over situations, individual movement, and even gestures, at times to an irritating degree. And yet our momentary impatience is partly due to the fact that we are in suspense; are, indeed, deeply held by the

steady march of tragic events, and chafe at the delay in reaching the next step in the development of the drama. The director may defend his *tempo* by pointing out that "Cape Forlorn" is a study of emotions and reactions, to which the slow passage of time, deadly *ennui*, the eternal repetitions of the elements, the eternal clamour of the sea, all contribute. But, even if the medium of the screen permits a more detailed exposition, a more leisurely building-up, than the stage in the matter of time, it has its limits. I could have wished a speeding-up of the later chapters, wherein the conflict comes to a head, merely in order to allow a little more space for the establishment of two characters—the husband's and the woman's—at the outset. The very fact, however, that we are interested to such a degree in the motives, the mental processes, of the protagonists, points to the triumphant success of this pictorial interpretation of psychological drama.

Captain Kell, the "skipper" of the lighthouse rising stark and uncompromising on a tiny island of rock, brings home a bride. We see her first in a luxurious dance-hall in Honolulu, welcoming an escape to "something cleaner." She is exquisitely gowned and groomed. What tempted this child of pleasure to exchange her mode of living for a home on a barren rock, shared with an elderly, unromantic seaman who shows her no signs of affection, and apparently takes it for granted that a woman, removed from such a *milieu*, will settle down to drudgery

and loneliness without the slightest encouragement, the smallest concessions on his part? Here, I think, the producer should have given a little more thought to the definition of these two vitally important characters. Moreover, it seems to me that he has sacrificed something of truth in the antecedents of the woman for the kinematic value of his elaborate dance-hall scene. But, once we accept the strange union of such a woman with such a man, the tragedy becomes inevitable and engrossing. The skipper's mate and a derelict stranger washed up by the waves, the one a brute, the other a thief, come under the spell of the woman. She sees a possible means of escape in the mate, but on the heels of her yielding comes love in the shape of the man from the sea. Catastrophe looms ahead, is in the air, in the lashing of the gale that whips the waves to greater fury as the emotional storm within the lighthouse gathers and rises. The swirling sea-gulls add their raucous calling to the laughter of the mate, who, for a time, sees himself master of the situation. Nature supplies the chorus to the elemental passions of man. It is in this intentional harmonising of two spheres that Mr. Dupont shows his amazing power. He has inspired his company—Fay Compton, Frank Harvey, Ian Hunter, Edmund Willard, and, in another of his perfect thumb-nail sketches, Donald Calthrop—to a full realisation of

the conflicting characters they portray. Their efforts are enhanced by the unimpeachable quality of Claude Friese-Greene's photography.



"CAPE FORLORN": EILEEN KELL (FAY COMPTON) COLLAPSES UNDER THE CROSS-EXAMINATION OF HER STERN HUSBAND, THE LIGHTHOUSE SUPERINTENDENT (FRANK HARVEY).

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"BUCHANAN'S LIQUEUR"

A PAGE FOR COLLECTORS.

THE STAGE IN PORCELAIN.

By FRANK DAVIS.



THE enormous success of the revival of "The Beggar's Opera" at Hammersmith some years ago was soon reflected in the shop-windows of the china-merchants: various little figures of Polly Peachum, Macheath, Lucy, and the rest of the characters (I think they were put out by Doulton's) testified to the popularity of Gay's charming imagination as interpreted by Nigel Playfair. A notable set of figures, made for collectors rather than for the general public, stands to the credit of Miss Gwendolen Parnell: these consist of characters from Sheridan. I believe Sir Basil Zaharoff is the owner of one of these sets: their quality is such as to make it certain that they will, a generation or two hence, create a genuine sensation if they find their way into Christie's before they reach a permanent resting-place in a museum.

It occurs to me that a word or two about early porcelain figures of actors and actresses may be amusing. I make no pretence that those mentioned here form a complete list, for there are several Chelsea pieces which are possibly meant to represent characters in a play,



4. AN EIGHTEENTH-CENTURY CHELSEA FIGURE IN WHITE PORCELAIN: HENRY WOODWARD AS "THE FINE GENTLEMAN" IN GARRICK'S PLAY OF "LETHE."

This figure of Woodward, a well-known eighteenth-century actor whose fame as a comedian almost equalled that of Garrick, was modelled from a contemporary print by McArdle. (Height, 10½ in.)



1. A PORCELAIN FIGURE WHICH, IT IS SUGGESTED, REPRESENTS GARRICK IN THE PART OF TAMERLANE: AN EIGHTEENTH-CENTURY BOW PIECE. (HEIGHT, 9 IN.)

if not actual performers, but which still await identification. Dresden seems to have first set the fashion by producing a series of popular little figures after the Italian "Commedia dell'Arte." These were adapted from designs in Riccoboni's "Histoire du Théâtre Italien," published in 1731—some of them from illustrations by no less a personage than Jacques Callot. The manufactory at Chelsea copied Continental designs wholesale, and among them these figures of the Italian Theatre. They are mentioned in the catalogue of the sixteen days' sale of Chelsea porcelain conducted in 1755 by Mr. Ford "at his Great Room in The Haymarket."

We now come to something more definite—one or two examples in which not only the

character in the play, but also the individual performer, is known. Figs. 4 and 5, in white porcelain, represent Henry Woodward as "The Fine Gentleman" and Kitty Clive as "The Fine Lady" (Mrs. Riot) as they appeared in Garrick's play of "Lethe." The Woodward figure was taken from a contemporary print by McArdle; that of Kitty Clive was modelled after a portrait by A. Mosley about 1750. A short note about these two may not be uninteresting to those who are not sure of their way amid the scandal and intrigues of the eighteenth-century stage.

Kitty Clive appears to have been a superb comedy actress, and uncommonly quarrelsome and uncommonly virtuous. No one ever seems to have accused her of departing from the strict path of respectability, but memoirs of the period are full of most entertaining stories of her downright brusqueness in carrying on—and, indeed, in manufacturing—a dispute. Poor Garrick required all his tact in dealing with so obstinate a member of the Drury Lane company. Mr. Lewis Melville quotes the oddest letters addressed by her to the managers of Drury Lane Theatre—letters much too long to reproduce here, and for which I must refer readers to his book on "Stage Favourites of the Eighteenth Century," where they are to be found *in extenso*, together with much else inspired by her, but assuredly not written by her, for even for the eighteenth century her spelling is incredible. Dr. Johnson—no bad judge—admired her wholeheartedly. "What Clive did best," said he, "she did better than Garrick; but could not do half so many things." On another occasion he said: "Clive is a good thing to sit by; she always understands what you say."

There was a great fight in 1736, when it was proposed to revive "The Beggar's Opera." Kitty Clive demanded the part of Polly Peachum, and so did Susannah Cibber. The town was vastly entertained, for, wrote Thomas Davis, "No two women of high rank ever hated one another more unreservedly than these great dames of the theatre." Here is part of a contemporary ballad—

Cibber, the syren of the stage,
A vow to heaven did make,
Full twenty nights in Polly's part
She'd make the playhouse shake.
When as these tidings came to Clive,
Fierce Amazonian dame:
"Who is it thus," in rage she cries,
"Dares rob me of my claim?"
With that she to the Green-room flew,
Where Cibber meek she found;
And sure if friends had not been by
She had fell'd her to the ground.

After her retirement, she lived at Strawberry Hill, as neighbour and friend of Walpole, who mentions her frequently in his letters. After her death in 1785 he put up an urn in the shrubbery by her cottage, and upon it had inscribed—

Ye smiles and jests, still hover round;
This is mirth's consecrated ground.
Here lived the laughter-loving dame,
A matchless actress, Clive her name;
The comic muse with her retired,
And shed a tear when she expired.



2. CONSIDERED TO BE GARRICK IN THE PART OF KING LEAR: A DERBY FIGURE OF 1760-1770.



5. "MISTRESS CLIVE" IN CHELSEA CHINA: A FAMOUS EIGHTEENTH-CENTURY ACTRESS IN THE PART OF "THE FINE LADY" IN GARRICK'S PLAY OF "LETHE."

This statuette of Kitty Clive was modelled after a portrait of her by A. Mosley (about 1750). She will be familiar to our readers generally from her tempestuous career, which is closely associated with the name of Garrick, and because, in her later years of retirement, she was neighbour to Horace Walpole at Strawberry Hill. (Height, 10 in.)

Illustrations by Courtesy of Messrs. Stoner and Evans.

We know considerably less about Henry Woodward. As an actor he was more than competent—and how was a mere man, unless possessed of the genius of a Garrick, to achieve the popularity of a tempestuous character like Mrs. Clive?

Apart from his purely professional reputation, Woodward is remembered chiefly by his will, in which he attempted to provide for George Anne (supposedly a baptismal error for Georgina) Bellamy, that frail and unhappy creature whose autobiography is not the least entertaining of many similar effusions that were perpetrated by famous idols of the public during this period.

Fig. 2 is reputedly David Garrick himself in the character of King Lear. It was made at Derby c. 1760-1770. This is no place for any praise of the most celebrated actor of the eighteenth century, nor for any details of his career, but the following story may be new to many, as it was to me.

Kitty Clive was a good hater, which makes this surely one of the finest compliments any actor could receive. John Taylor has recorded that one night Kitty Clive came behind the scenes to watch Garrick performing King Lear. "In spite of the roughness of her nature, she was so deeply affected that she sobbed one minute and abused him the next, and at length, overcome by his pathetic

touches, she hurried from the place with the following extraordinary tribute to the universality of his powers: 'Damn him, I believe he could act a gridiron!'

There is another known Derby figure of Garrick as Richard III., and it is suggested that Fig. 1 (a Bow piece) is the great actor-manager in the part of Tamerlane.

The companion piece (Fig. 3) is not identified. Two later figures of similar type may be mentioned—nineteenth-century Staffordshire pottery examples of Liston as The Landlord and Paul Pry.

It is not impossible that several of the many theatrical figures and groups from Bow, Chelsea, and Derby will one day be definitely identified, but it must be confessed that proof is extremely difficult to establish.



3. AN EIGHTEENTH-CENTURY THEATRICAL PORCELAIN FIGURE OF BOW PROVENANCE: A PIECE SHOWING TURQUOISE BLUE—A VERY RARE COLOUR FOR BOW. (HEIGHT, 9 IN.)

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THE CHRONICLE OF THE CAR.

By H. THORNTON RUTTER.

Future Events; Le Mans. New speed models are being designed at the present time for various speed contests to be held this year. Thus the Lorraine-Dietrich Company is now building a series of cars having twelve-cylinder engines of about 5000 c.c., in order that they can enter three of these cars for the Le Mans twenty-four-hours' race in June. No car can be entered for this event unless the maker puts it into general production and builds a certain minimum number—twenty-five, I believe—to sell to the public. I am told that these "double six" vee-type motors will be very fast. Another firm which hopes to win this event this year is the Italian Alfa-Romeo. They intend to enter a team of three cars also, but so far I have not heard whether they intend to rely on their present two-litre sports touring cars or intend to run a new larger model which rumour states is in preparation for testing, if not for production just yet. Germany, too, realises the value of this classic event, so in June she is expected to be represented by a team of three Mercedes. England this year will have to depend on the reliability of the Talbot, as she will not have the Bentleys to fight and gain another victory. As the latter have been the winners during the past four years, they decided to stop racing in 1931, as far as official teams from the factory are concerned. Whether we shall see any amateur drivers enter Bentleys for this race remains doubtful at the moment, but there is plenty of time before the entry list finally closes.

New Speed-Track Records. There have been so many new class records made recently by English drivers on the Montlhéry track that 1930 ended with a blaze of glory for the "speed merchants." I think Mrs. "Colonel" Stewart deserves a special mention, as she actually created a new ten miles' world record on Dec. 13, driving Mr. W. D. Hawkes' Derby-Miller Special at an average pace of 137.205 miles per hour. As most motorists know, world records are very, very difficult to get these days; so when a woman takes one "off the shelf" it is something to be proud of. Also, I should like to add a word of praise for the "racing" Shell petrol she used on this occasion. It was a marvellous run, and the "racing" Shell petrol gave the engine its maximum power for the record. This was due to

the high concentration of natural "anti-knock" hydrocarbons, a distinguishing feature of all motor fuels sold by the Shell-Mex Company. High-compression engines are most sensitive to fuel infirmities, so that nothing but the soundest form of petrol spirit will let them "rev" their highest speed and develop the necessary extra horsepower that wins records.

Speeding-Up Swift Cars.

Nowadays everybody likes to travel fast when opportunity to do it safely occurs, so the winter months see quite a number of owner-drivers improving the speed of their cars above that of the ordinary stock model. I am reminded of this by a letter which has arrived from a reader thanking me for recommending the substitution of the cast-iron head of the cylinder-block by one of aluminium. His garage man bought an aluminium head for his 10-h.p. Swift 1930 saloon, and fitted it. The owner writes that under identical conditions the car is eight miles an hour faster on third-speed gear, and will travel at over sixty miles an hour on top. Equally improved is the general smoothness of running; and he adds, "three miles per gallon improvement in petrol consumption." I am rather surprised at that, because higher speed seldom brings lower fuel consumption. However, when he had fitted the aluminium head he had the baffles in the silencer pierced, and a fish-tail added to the exhaust pipe. Then he drove the car to Solex Works, in the Marylebone Road, London, who corrected his carburetter. This last, he says, was done in a very few minutes. These alterations seem to have successfully added to the liveliness of his Swift, so I pass on his experience to others. The suppliers of the head were the Aluminium Cylinder Head Co., Ltd., 87, Regent Street, London, W.1., who, I understand, supply heads for all popular types of cars. Swift cars are reliable little buses, with a good steady pace at their owners' command. But, as this individual owner remarks, "it is really worth while to replace the present cylinder-head with one of aluminium."

Temperature Controls Improve Running.

Motorists abroad pay much greater attention to temperature controls of the water circulation cooling system than we do in England. Yet our changes of temperature are very frequent, if not so violent in the upper and lower scale readings of the thermometer. I am sure many motorists who complain of the running of their cars would improve their performance by a little care in

this direction. One can add a Smith's "car-thermo" to the dashboard fittings, which tells the driver the actual temperature of the water in the cylinder-head in Centigrade degrees. It is not difficult to fit, as the temperature element is inserted in a hole in the radiator hose, and the outfit is supplied complete with a flange or sunk mounting for the temperature gauge element, hose-cutter, and six feet of copper tubing, for twenty-five shillings. Having now fitted an accurate thermometer for the cooling water, you next fit either a muff or radiator shutters on the radiator. Then you also have a further controlling device in the fan. In winter time one can usually dispense with its working, so take off the fan or remove the fan blades if a geared drive. The important point to be remembered in putting any car's fan out of commission is that rain is apt to blow in through the radiator and upset the electrical equipment if near it. When the fan is running, this shields and whirls away the wet. But when not running the heavy rain may upset the distributor if near the radiator. Consequently it is wise to erect a light metal shield to protect such electrical elements from effects of rain, and so on, when the fan is still. By keeping the water-cooling temperature about 80 deg. Cent., the fuel consumption should be improved when the carburetter is in its best setting for everyday running, and the engine will give better power and so pull longer on high gear.

The eighty-ninth edition of that famous work of reference, Burke's "Peerage, Baronetage, and Knightage" is now on sale. It is a work of remarkable interest from the historical and romantic point of view, as well as being an exact and correct record of the aristocracy of Great Britain, as it records the lineage of the great families of this country, and the part which their ancestors played in its history. In his preface to the 1931 edition Sir Bernard Burke, Ulster King of Arms, draws attention to the notable happenings of the year. The birth of the Princess Margaret Rose, second daughter of the Duke and Duchess of York, now places our youngest Princess as the fourth individual in the direct succession to the Crown. In regard to changes in the Peerage, 1930 has not brought so many as in past years, for only ten Peers have been created as against 26 in 1929, and eight new Baronetcies. Thirty-two Peers have died, and nine of these peerages have become extinct, while two Dames of the Order of the British Empire have also passed away.



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A CARPET FROM THE SHRINE OF IMAM RIZA.

(See Colour Page in this Issue.)

ONE of the most impressive exhibits sent by his Majesty the Shah of Persia to the Royal Academy Exhibition is a carpet from the Shrine of Imam Riza at Meshed, the most sacred and carefully guarded spot in all Persia. Tradition has it that it was given by Shah Abbas himself to the



SPECIALLY CARED FOR AT THE STOKE COURT COUNTRY CLUB: FRENCH BULL-PUPPIES AT THE ENTENTE KENNELS, WHICH SPECIALISE IN REARING THIS NOTORIOUSLY "DIFFICULT" BREED, AND HAVE PRODUCED SEVERAL CHAMPIONS.

Dog-lovers who do not already know the beautiful Entente Kennels in the grounds of the Stoke Court Country Club at Stoke Poges should make a point of availing themselves of the welcome offered to all readers of this paper. The kennels are well worth seeing, and the surroundings are full of historical interest. The Stoke Court Country Club was once the home of the poet Gray, and it was there the famous "Elegy" was begun. His own rooms are still preserved. The kennels are built with the latest modern improvements; and about fifty dogs can be accommodated. Dog boarders of any kind are taken, and special care is given to French bulldogs. This fascinating breed is notoriously difficult to rear, but no fewer than seven champions have come from these kennels.

shrine which he did so much to exalt and enrich, probably with a shrewd eye on the economic and political advantage of diverting the pilgrim traffic from Mecca and concentrating it within his own

borders. The carpet belongs to a class which has commonly, but erroneously, been attributed either to Isfahan or to India. We can be sure that they were not woven in Isfahan, for a contemporary European traveller has said definitely that no carpets of worth were being produced there; and there is no reason in style, technique, or material for admitting an Indian origin, which is merely a chance assumption in the art trade. But Indian documents do tell us that fine carpets were being made at this time at Sabsowar, and European travellers speak of important carpet-weaving at Herat. Thus it seems probable that the type was produced in various centres in Khorassan.

The dating for this style of carpet is well established, owing to the fact that many European painters, of whom Van Dyck and Rubens are the most notable, depicted them in their canvases. These dated representations enable us to say that examples with certain characteristics must be at least as early as the first quarter of the seventeenth century, and certainly this carpet falls within that period. Later examples, which are very numerous, can be quite accurately dated by an analysis of the patterns, for carpet designs, like all others, have an evolution and a life history, and hardly a decade passes without some modification being evident in them. The process is generally from a well co-ordinated intricacy which yet maintains spaciousness toward larger and less complex forms, less subtly arranged. This process ends in what is really the death of the design. It becomes clumsy and ambiguous. The designers then start again on a new style, with special emphasis on finesse and elegance.

The Imam Riza carpet is a direct reflection of the character of one of the greatest Persian monarchs and an eloquent record of the qualities of his Augustan reign. Shah Abbas was a man of unusual force and originality, a commanding figure who infused new robustness and opulence into all the arts. If this carpet was not made for him, it might well have been. The grandiose and forceful patterns, the huge scale, and the rich materials and vibrant colours vividly suggest his personality. The composition is built on an earlier scheme of spiral vines in the field and undulating vines in the border, terminating at spaced intervals in majestic palmettes. The palmette at the bottom, like a great blazon, is the focus of the

whole design whence issue the basic traceries. All of the lines are heavier than in earlier carpets, and they turn on wider circuits, pressing against the margins with an expansive force. The palmettes are larger and more massive and more emphatic in their internal construction and sharp margination. Compared with its predecessors, this whole pattern has more weight, mass, and energy.

The framework of the pattern, the spiral vines and leaves, is laid down in silver on a ground of deep crimson in the field and dark emerald in the border. The decisive contrast is modified by a variety of other tones and by a harmonious balance of all the colours. The carpet is in a remarkably perfect condition, though much of the silver has disappeared. This, however, does not mar the effect; for the white silk core fills its rôle with exceptional fidelity. All the colours are of a clarity and intensity which has always been the ideal of the Persian dyers.



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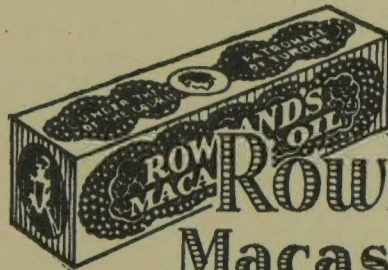
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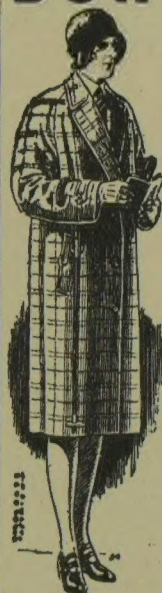
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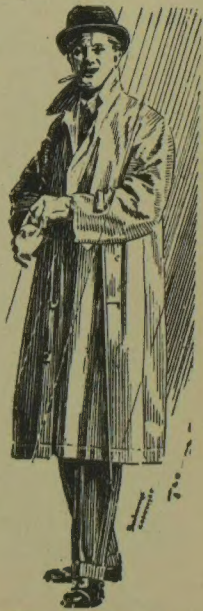
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"THE ANDRÉE DIARIES."

(Continued from Page 102.)

was to take them ever to the west of their destination. Andrée's two diaries, though they compose only a small fraction of its bulk, are, of course, with the photographs, the great treasure of the book. Of the second diary, which was, in any case, very short, only a few tantalising fragments, half and quarter lines, have been deciphered. These notes appear to have ceased entirely shortly after the landing at White Island on the 5th of October. This move was the outcome of the "exciting situation" which developed after the ice-floe, close to their snow hut, had broken up. The last record we possess of the expedition comes not from Andrée, but from Strindberg. Against the 17th of October in his almanac he has written: "home 7.5 o'clock, a.m." The rest is silence.

Andrée's First Diary, nearly seventy pages of print, begins on the 11th July and closes on the fatal 2nd of October with the brave words "No one had lost courage; with such comrades one should be able to manage under, I may say, any circumstances." At the beginning, it is nearly as fragmentary as the Second Diary, but afterwards it becomes continuous, and gives a complete record of the journey of the three men across the pack-ice. The text is printed entire, and also provides the material for an explanatory narrative. From every point of view it is a document of tremendous interest. Nothing in it is more impressive than the way the men were able to keep up their spirits and good humour through two and a-half months of appalling hardships. On August 29 Andrée writes: "To-night was the first time I thought of all the lovely things at home. Strindberg and Fraenkel, on the contrary, have long spoken about it." What commentary on their terrible plight could be more restrained, and, at the same time, more moving, than this?

Fraenkel, who might have been expected to have more endurance than the others, suffered most; he was severely handicapped by blisters on his feet, and intestinal trouble. But, in the opinion of the experts, the men did not die from disease. Nor was it starvation that killed them; they were not in want of food, for provisions were found among the remains; they had "ammunition for a considerable time onwards; they had cooking utensils, matches, and fuel; but they were not equipped to meet the cold of winter on an island which was almost entirely covered with ice, and where there was no other protection from the storms coming from the sea than what was afforded by the tent. . . . The sealer Sørensen, of the *Isbjørn*, has almost certainly given the correctest answer to the final riddle of the Andrée Expedition when he declared: 'I think they died in their sleep!—that the cold finished them! In any case, they have not died of hunger!'

It is some consolation to think that, at any rate, one form of suffering was spared to these gallant Swedes. This book is a noble memorial to their ill-starred but magnificent enterprise.

L. P. H.

MARINE CARAVANNING.—CXII.

By COMMANDER G. C. E. HAMPDEN, R.N.

IT is interesting to note that the number of motor-car manufacturers who build marine motors is increasing. Only two years ago I overheard one of them remark that he had no faith in the marine engine as a business proposition because boats could not be used all the year round like motor-cars, so engines for them could never be required in sufficient numbers to warrant mass-production methods. That man knew nothing of the sea, and had travelled very little; he therefore looked on everything with a parochial mind which never realised that there are vast areas on this earth where boats are used all the year round, in ever-increasing numbers, both for utility and pleasure purposes. The firm he controls now makes several types of small marine motors, for he is now better educated, and more far-seeing in consequence. Yachtsmen gain thereby, for the more engines that are built, the cheaper they will become.

In one way, I am glad that motor-car manufacturers have entered this market, but I see danger ahead unless they become boat-builders as well. From the point of view of selling, and making boats still more popular, the advent of the car salesman into the boat trade should help it enormously, for the latter is devoid of good selling methods, of which the car trade has an abundance. Boat-designers and builders of standard craft, for example, as yet have failed very obviously to note that, to a large extent, the attraction of the modern motor-car has been created and increased by the fair sex. Practically all the numerous small items that make the modern car comfortable and labour-saving are the indirect result of demands made by ladies. Though this is recognised, and is acted upon by the car-designers, what has been done by those responsible for the production of standard boats? Practically nothing, except pander to the requirements of mere men. Admittedly a few attempts have been made to produce vessels that are suitable for lady owners, but they all lack many attractive requirements which

make all the difference. Take, for example, anchor capstans, whether of the hand or mechanically operated types. There does not appear to be one on the market off which a pump is worked automatically for the purpose of washing muddy cables as they are hove in. Anchor work at night time also necessitates a light to shine on the cable, and this is hardly ever supplied unless specially ordered. Boat-hoisting arrangements have remained much the same as in the days of Nelson. Men can operate them, but, if yachting is to become still more popular, the hoisting of boats must be made easy for ladies in the absence of any men.

The usual fittings found in the galleys of small yachts provide another instance in point. Oil stoves, with their attendant smell when in careless hands, can never be as satisfactory as electric cookers; everything should be electrically operated in this department as far as possible, in order to save the drudgery connected with food generally. I have pointed out on a previous occasion that electric power, properly utilised throughout a yacht, will very soon save its initial cost by reducing the number of paid hands required. Sails, boats, and anchors can all be hoisted by electricity, and it can also be used for pumping, ventilation, cleaning by means of vacuum cleaners, and many other purposes.

I am much in favour of price reduction where boats are concerned, and I realise that standard boats are built with that object, but it is useless to offer a cheap article that does not attract. Car-manufacturers know how to make their products attractive better than the boat-builders, and, as their interests are identical with those of the latter, I feel that the two should join forces to a greater extent than they do at present, and thereby benefit both themselves and the users of boats. Many of the engine-builders that have been recruited from the motor-car trade make a great point of having no connection with the boat-builders; in this they are short-sighted, for the days are past when they can be content with merely selling engines and then forgetting them. The user must be nursed, and this means taking an interest in his boat as a whole rather than her engine only. The two cannot be separated, and because of this a danger exists of a lack of proper "service" where the engines of motor-car firms are concerned. The weapon lies in the hands of the users.



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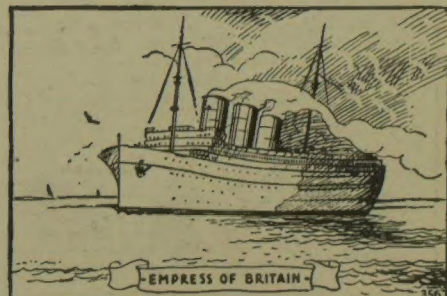
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